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Original Articles.

TREATMENT OF PUERPERAL FEVER.*

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CHICAGO.

The mortality from puerperal fever can be reduced to almost nothing by the proper management of labor and childbed. This has been proven by the results obtained in the best maternity hospitals. Mild cases of infection can not be entirely prevented, but they cease to be a source of great anxiety to the physician and of danger to the mother.

In private practice these encouraging results due to the aseptic management of labor are not obtained because labor is not managed aseptically. In Chicago the mortality from puerperal infection has remained about stationary for the last ten or twelve years. From 5 to 7 per cent. of all deaths of women of child-bearing age are from puerperal infection. It is probable that the same ratio holds all over the state and country. Hence it appears that puerperal infection carries off more women in the prime of life than any other disease except consumption. How much sickness not fatal is due to the same cause can be easily imagined.

These discouraging conditions are due in part, no doubt, to the fact that a considerable number of confinement cases are still in charge of incompetent midwives and women with no training whatever. So far as the responsibility of the profession is concerned the trouble is that the matter of the aseptic management of labor is not taken seriously enough. The frequently repeated observation that many women get along all right in the worst surroundings seems to create a doubt in the minds of many whether all the bother required to manage a labor aseptically is necessary. Then the frequent internal examination and the early and unnecessary operative interferences without proper preparation increase the dangers manifold. The source of all the trouble is, I believe, the failure of both the laity and the profession to recognize the importance of labor and its management. So long as obstetrics is the poorest paid department of medicine, so long will it be the most neglected.

Since the prophylaxis is unsatisfactory the treatment of puerperal fever continues to be an important subject. Ever since the demonstration of the microbic origin of this disease the principles and methods of treatment have changed considerably from time to time. At first much was expected of the antiseptic applications and irrigations. Many of you will remember that fifteen years ago sublimate vaginal and intrauterine douches were generally recommended in all cases of infection. Experience soon proved their uselessness as well as danger. Not only were serious and fatal cases of general intoxication reported, but the local effect of the solution on the vaginal and uterine tissues was detrimental. The hope of killing the germs with the microcidal solution was vain, because, as we soon learned, the sublimate had very little penetration and the great mass of bacteria was beyond its reach.

The direct application of antiseptics or caustics to the infecting germs and the dead and ulcerated tissues is possible only in the vulva, the vagina and the vaginal portion of the cervix. Here nitrate of silver, carbolic acid and other milder caustics may be applied to the well-exposed puerperal ulcers with the effect of hastening the separation of the sloughing tissue and limiting the amount of absorption of toxins and favoring and shortening the inflammatory process. If these applications be made with care so that not too much injury be done to healthy or uninvolved tissue they may be of value. We must remember that the most radical treatment can not destroy all microbes. The best we hope to do is to assist in removing contaminated and sloughing tissues. Keeping this principle in mind some effort may be made to treat antiseptically the accessible vaginal and vulvar infected wounds.

When the uterus is infected we can only hope to remove, first, decidual and placental debris in which microbes find a favorable soil for growth, and second, the toxic products which, if absorbed, caused the general systemic disturbance. Two kinds of microbic disease are generally recognized. One is a true infection, caused usually by streptococci and staphylococci, which may invade living tissues and not only produce poisons that cause general intoxication, but also injure the local tissues and by means of the circulation migrate and cause remote injuries. The other microbic disease is called a sapremia or saprophytic disease, and is due to germs that live only on dead or dying tissues. This disease is largely an intoxication from absorbed products of these saprophytes. Considerable doubt has been thrown on the reality of this distinction. First, it has been shown that in many cases diagnosed clinically as saprophytic, parasitic bacteria have been found. Secondly, supposed obligate saprophytes have been found to invade the uterus like true parasites.

The view that a true infection is always very dangerous and attended with serious symptoms is disproved by bacteriologic examinations. Staphylococci, and even streptococci, are found in very mild cases where there is only fever for a day. Very serious symptoms often mark a saprophytic intoxication. The diagnosis can be made positively only by a bacteriologic examination, and then is often uncertain on account of the presence of both

* Read before the Southern Illinois Medical Association, Nov. 6, 1902.

parasites and saprophytic germs. Without an examination we can only assume that a given case is a sapremia when there is a stinking discharge, because many of the saprophytes produce a foul-smelling gas while the parasites do not. If all symptoms disappear permanently after the removal of the uterine contents we can then say that the case was probably one of saprophytic disease.

In the case of puerperal saprophytic intoxication, it is only necessary to remove the debris in which the germs live to cure the disease. If there be free drainage from the uterus to carry off the products and the debris as it is gradually formed, the disease will terminate spontaneously with few symptoms beyond the foul-smelling lochia. If, as often happens, drainage is interrupted by occlusion of the cervical canal, it should be restored or the debris should be mechanically removed. This may be accomplished either by irrigation or by the use of the curette.

If irrigation be employed sterile water or normal salt solution should be used. Since the only object of irrigating is to remove debris a harmless is as good as an antiseptic fluid and to be preferred because of the danger of poisoning from the latter. One intrauterine irrigation of two to three quarts may bring away considerable debris and so re-establish drainage that it suffices for a cure. Frequently, however, the decaying decidual masses are not removed, and the cervical canal is again occluded and repeated irrigation becomes necessary. This fact, and also the danger of carrying the infection into and through the tubes, and the danger of injuring the uterus with the douche tube, constitute the objections to irrigation.

A suitable curette properly used may be of great value in removing mechanically the contaminated decidual and placental debris. The proper construction of the instrument is determined by a consideration of its dangers. The chief objection to it is the danger that it may perforate or injure the uterus. To avoid this danger it should be of ring or loop shape, and the shank should be sufficiently flexible so that it will bend before it penetrates normally resisting living uterine tissue. One edge of the ring must be sharp enough to cut soft tissue. Such a curette in the hand of one who recognizes its dangers is fairly safe. The surface of the uterine cavity should be carefully gone over with this instrument while the irrigation washes away all debris removed. The application should be so thorough that it need not be repeated. So used, once for all, the curette has its place, and a valuable one, in the treatment of sapremia.

After curetting should the uterus be tamponed? I believe the common idea that a tampon is a drain to be incorrect. It is rather a plug which stops up the cervical canal. An intrauterine tampon stimulates the uterine contractions and its circulation. In this way it helps in the shedding of adherent pieces of decidua and placenta which come away with the tampon on its removal. These facts established by clinical observations determine the rule for the employment of a tampon. When a curettement can be done thoroughly, so that all debris is certainly removed, omit the tampon. When it is impossible to curette thoroughly or even at all on account of weakness of the patient or lack of anesthetics or for other reason, tampon the uterine cavity with sterile gauze, which should be removed in twelve hours.

In the local treatment of true puerperal infection we have to rely on the same measures, drainage, irrigation and curetting. The object of the curette is here, as in sapremia, to remove intrauterine debris, which forms a good culture medium for the parasitic germs. A special danger pertains to its use in this case which should be considered. Nature combats the parasitic invasion by the establishment of an inflammation which is a preservative process. It consists essentially in the formation in front of the invading microbes of a wall of leucocytes whose function it is to destroy them and neutralize their poisons and thus expel them or limit their advance. This opposition of Nature will be successful unless the parasites are too numerous or too virulent or the resistance of Nature too feeble. In this latter case no local treatment can help. In the former there is the danger from the curette that the instrument will break through the leucocytic wall and give the microbes a free passage into the vessels and tissues of the formerly protected zone. Hence in a true infection the curette should be used with unusual care not to wound healthy uterine tissue.

In a true infection drainage and irrigation remove the parasitic products, as in the case of saprophytic disease. Some of the dangers of irrigation have been mentioned. Another danger in cases of puerperal infection is that of washing out thrombi from the veins and forcing the fluid into the circulation. For these reasons the usefulness of irrigation is limited.

This study of the conditions for the employment of these measures prepares the way for the practical rules to be observed in managing cases of puerperal fever as they arise. When the temperature of the puerpera rises above 100, whether this rise be accompanied by a chill or not, we first examine the vulva and introitus vaginæ. If this region be inflamed and gray patches appear where tears had existed, local applications may be made as previously suggested.

If the vulva is normal we note the condition of the lochia. If it is offensive we diagnose a sapremia either alone or accompanied by an infection. If the lochia is scanty or absent when it has previously been free we consider the lack of uterine drainage to be an important factor in the causation of fever. In this case we seek to re-establish drainage perhaps by massage of the uterus or by changing its position or by securing free catharsis. This last measure is, as you all know, very often efficacious. Sometimes, no doubt, the fever is due to intoxication from bowel contents, and this, of course, is best treated by securing catharsis. In other cases, however, a uterine infection is favorably affected by catharsis, and probably by the effect of the intestinal movement in starting up uterine drainage.

When the fever continues in spite of a thorough trial of these measures for twelve to thirty-six hours, we will have to consider the advisability of intrauterine irrigation and curettement. If the lochia does not reappear in spite of our manipulations we have good reason to attribute the fever to lack of drainage and anticipate favorable results from irrigation. When we know that the afterbirth came away complete there is less indication for curetting. If we see the patient first after the fever has existed for some time and the probability is great that considerable intrauterine debris is present we waste no time, but proceed at once to clean out the uterus with the technic before suggested.

Whenever the uterus is invaded, either with the douche tube or the curette, it is very desirable to obtain a specimen of the uterine contents for microscopic examination and, if possible, for a culture growth. The presence or

absence of parasitic germs not only influences the prognosis but occasionally the treatment.

After the uterus has been once thoroughly cleaned, a continuance of the fever indicates an extension of the infection beyond the surface of the endometrium. Further efforts at local treatment are in vain. When the uterus and adnexa are tender the trouble may be localized or confined to their region. The appearance of peritonitis shows the extension of the infection through the uterine walls. In the not uncommon condition of absence of local tenderness, with symptoms of profound general intoxication, we have to do with bacteriemia.

Cases of pelvic and general peritonitis are best treated with hot moist dressings to the abdomen and measures to overcome distension and paralysis of the intestines. Local treatment of the uterus should be at once suspended. General septicemia or bacteriemia is also quite beyond the reach of any local treatment. Here we should institute tonic supporting treatment, with most careful attention to nutrition and protection from all waste of energy.

It is necessary to refer to two measures to combat sepsis that have been recommended for use in puerperal fever or that are more or less in vogue, viz., the antistreptococcus serum of Marmorek and the silver preparations of Credé. It is only necessary to say, in regard to the former, that experience with it has been unsatisfactory. Reports from the Credé treatment of sepsis are much more encouraging. Both the unguentum Credé and the more recent collargol used hypodermically have proved of value and are not dangerous in their employment.

Finally, I must say a word about the subject so often discussed at present: hysterectomy for puerperal fever. I believe its field is exceedingly limited. It is indicated only when the infection is confined to the uterus and when Nature is incompetent to combat the infection. It is evident that the difficulties in diagnosing this condition are so great that they are practically insurmountable. Therefore, I believe this operation may be omitted from our list of measures to be employed in the management of puerperal fever. The surgical treatment, consisting in the evacuating of a puerperal abscess, whether located in the abdominal cavity, the pelvic connective tissue or elsewhere, is, of course, indicated whenever this condition is determined.

FLATFOOT IN INFANTS AND CHILDREN.

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The subject of flatfoot in children has received but little attention and the condition is often overlooked. The former opinion that all children were flatfooted at birth has been rendered untenable by the investigations of Dane, who demonstrated that a normal arch exists at birth, but that in well-nourished children a pad of fat is present in the sole of the foot which fills up the natural hollow of the foot and leads to the appearance of flatfoot. In thin children this pad does not exist and the imprint of the foot then resembles the adult type. Section of the bones shows that the arch of the foot exists from birth.

FLATFOOT IN INFANTS.

Heavy children who walk early, and especially if they have any grade of rickets present, are apt to show soon after beginning to walk a tendency to tread on the inner border of the foot, which is likely to attract attention. The boots are run over to the inside and the leather of the upper is soon brought in contact with the ground, and the whole boot, being of soft and yielding leather, is twisted to the inside and its abnormal shape is noticeable. This, of course, makes the inner malleolus more prominent than it should be, and seen from in front the foot is markedly displaced outward in its relation to the leg. Children of this age rarely complain of pain, but they walk with the feet wide apart, with a somewhat unsteady gait; they are obviously clumsy and they trip easily and have many falls. On examination the foot is normally moveable in all directions and can be readily put back into the normal relation with the leg. There is no tendency toward fixation in the abnormal position as in flatfoot of the same grade in adults. The knees are generally lax and when fully extended permit marked lateral mobility. When the child stands, on account of this lateral mobility the tendency to flatfoot is exaggerated. The combination of lateral mobility in the knees with the tendency to walk with the legs apart it is easy to see tends to exaggerate the disposition to throw the weight onto the inner border of the foot. When seen standing without shoes or stockings such children present an appearance of marked flatfoot with a suggestion of knock-knee.

Such children are not necessarily feeble or debilitated, but often of the most robust and heavily-built type. The cause of the difficulty is obviously a disproportion between the weight to be borne and the muscular power, and even a slight grade of rickets seems to relax the muscles and ligaments to an extent which strongly predisposes to it.

The affection is invited by the bad shape of many children's shoes. Until lately they were all made the same for each foot, rather narrow in front, wide and roomy at the middle of the foot, with no support to the arch and little or no heel. Of late years shoes have been made better suited to the foot, but still far from perfect. These shoes have a straighter inner edge, with more room in front, and tend to hold the foot adducted rather than in a position of abduction. They are still deficient in having little or no support for the arch of the foot and of being so yielding that they afford little assistance to the muscles.

To diminish in children with this trouble the support to the muscles by prescribing the use of moccasins or by ordering walking in the bare feet seems unphysiologic, because the weight comes on a foot still less supported to bear weight than if a fair boot is worn. The same is true in a measure of the use of low shoes and slippers when there is a tendency to flatfoot. A lacing about the ankle makes it easier for the muscles to exert their force, and a good boot will improve a flatfooted child's standing position as soon as it is put on and hold the foot in better position as long as it is on. The argument that the muscles should be left free to develop in the feet of such children is negatived by the fact that the muscles in question are already stretched and overfatigued and require support rather than further freedom and increased demand on their energy.

In the treatment of these cases the mildest measure that will suffice to hold the foot in a correct relation to the leg is the best suited to the case. The muscles should be as little cramped as possible and rigid support is to be avoided if possible. In the mildest cases the use of a proper shaped boot may be enough to correct the trouble if the child has been wearing boots of the old pattern, but such boots are easily stretched out of shape.

and new boots correct much better than old ones. Making the inner edge of the sole and heel thicker than the outer edge by 1/8 or 1/4 of an inch will in some cases throw the weight more onto the outer border of the foot and correct the deformity, but this method is open to the objection of throwing the outer border of the foot strongly against the outer leather of the boot and often causes a corn on the little toe, the foot simply sliding down the incline onto the outer side of the boot.

The most generally useful method of correction in infants is by means of a graduated pad of leather or felt incorporated in a thin leather inner sole, which raises the arch of the foot and holds the foot on its outer border. It has the advantage of not making the sole of the boot rigid and allowing a proper use of the muscles on which the ultimate cure depends. This pad should reach at the inner border of the foot from just behind the ball of the great toe to a point in front of the heel. It should extend the whole width of the foot. At its edges it should rise gently to its greatest height along the middle section of the inner border.

In the severer cases a flatfoot plate of metal or celluloid is required; celluloid is preferable as being lighter and less rigid and generally is sufficiently resistant to last a reasonable time.

In the severest cases of all some outward pull on the inner malleolus is required, and in these cases a steel sole plate jointed at the ankle to an upright running up the outer side of the leg to the upper part of the calf is necessary. From this upright a circular leather strap runs around the inner malleolus to pull it outward. Fortunately, this apparatus is seldom required.

The length of time that treatment will be required varies. In the milder cases the use of a pad for a few months will often effect a cure. In the severer cases it is likely that some form of support will be required for several years.

Massage to the muscles of the calf and sole is of much benefit in the treatment.

FLATFOOT IN CHILDREN.

In older children the treatment does not differ essentially from that of adults, inasmuch as plates are generally necessary as a means of support rather than the soft pads described for infants. In children, however, rigid flatfoot is rare, and the lax and yielding foot is the rule, which requires accurate and definite support.

Pain is rarely complained of by children in flatfoot or pronated foot, and the commonest symptoms are prominence of the inner ankle, bending over of the boots or uneven wearing of the heels. Knocking one ankle against the other is often found. Corns and calluses are rare.

In children from 5 to 15 the occurrence of lax pronated foot should lead to an inspection of the back, as scoliosis very frequently coexists as a result of the same muscular laxity that causes the deformity of the foot.

Two matters in treatment are essential: The foot should be supported in the correct position and the child should be trained in the use of the muscles supporting the arch and should be drilled in correct standing.

For the support a light steel plate is most often useful, although celluloid is more serviceable in children than in adults. This plate is most often to be made with an outside as well as an inside flange to keep the foot from slipping off, and the plate must be seen every four months if it is to be kept efficient as the child grows.

The prognosis in both infants and children is in general excellent as to complete recovery, but exercises must form a part of the treatment to bring about this result.

THE PRESENT POSITION OF GALLSTONE SURGERY.*

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Over a quarter of a century has passed since Marion Sims did the first planned operation for gallstones, and sufficient time has now elapsed to permit a fairly correct judgment as to the present position of gallstone surgery. But before gallstone surgery will show its best results the profession as a whole must recognize that there are no solvents which will dissolve gallstones in the gall bladder and bile ducts, and must, furthermore, recognize their own culpability if operative interference is delayed until the vital powers are exhausted. No field of surgery gives greater relief from agonizing pain, or gives greater capacity to do one's normal work than judicious early operations for gallstone disease. Not for an instant would I be understood as advocating operation in every case of pronounced gallstone colic. But when the attacks recur frequently, show a tendency to increase in severity, and become more and more incapacitating, then an operation is imperative and should be done before the recuperative powers are greatly impaired.

THE FALLACY OF INTERNAL MEDICATION.

In the advance which gallstone surgery has made in the past 26 years, the surgeons have been obliged to lay several popular and professional errors. The first in magnitude and, unfortunately, still prevalent among the profession is that stones can be dissolved by internal medication—a heretical doctrine which yearly claims its hecatombs of misguided victims. It is the more deplorable because any one with an extensive experience knows that long periods of time sometime elapse between attacks. I know of one case of over 19 years' interval and another in which six weeks before his fatal attack a brother physician boasted to me that he had dissolved, by daily doses of soda, the gallstones from which he had formerly suffered, and for nine years had been absolutely well. Within six weeks of that day he died from perforation of the gall bladder, and 153 stones were found therein.

THE REAL CAUSE OF THE COLIC.

Right here it is well to recall the present teaching that it is the associated inflammation which occasions the pain and cramp and not the mere presence of the stones. This seems a rational explanation of the quiescence of stones found at autopsy in so many persons who never have suffered from gallstone colic or other condition commonly associated with gallstone disease. It furthermore explains the fact of putty-colored stools often preceding for a day or two the appearance of gallstone colic. This last fact I, with apprehension, noticed many times in my own case. The profession is and has been slow to learn that pronounced jaundice is not a common symptom of gallstone disease. On this Lawson Tait laid great emphasis, and also that when jaundice was very deep and persistent it pointed rather to a malignant complication. This experience of Tait has been borne out by that of Mayo Robson

* Read at the meeting of the New York State Medical Association, New York City, Oct. 21, 1902.

and Kehr. Kehr declares that jaundice is absent in 80 per cent. of gallstone cases. Even when large stones are in the common duct, the jaundice is never so deep and persistent as in malignant diseases. Another important diagnostic factor is that in case of stone in the common duct the gall bladder is usually contracted and often a mere rudiment, whereas a very largely distended gall bladder, accompanied by jaundice, is almost invariably due to malignant obstruction. Courvoisier, who first statistically demonstrated this fact, claims that the repeated attacks of inflammation necessary to extrude a stone of any size from the gall bladder into the common duct, lead to thickening and contraction of the walls of the gall bladder.

OPERATIVE RELIEF.

Now, if gallstone disease is a surgical affection, what are the operative procedures which offer the best chances of cure? Lawson Tait commonly did a simple cholecystotomy, incising the gall bladder, evacuating the stones and then stitching the gall bladder to peritoneum and aponeurosis with temporary drainage by rubber tube. This operation in the hands of Tait, Mayo Robson and Kehr has proved curative in the vast majority of cases with a mortality of less than 2 per cent. Tait was accustomed to crush stones in the cystic and common ducts by fingers or padded forceps, and Thornton commended breaking up common duct stones by passing needles through the ducts into the stones. When Courvoisier and Marcy deliberately excised stones from the common duct a new era dawned on gallstone surgery, for it not only showed that stones could be safely excised from any portion of the common duct, but that in cases of severe infection the common and hepatic ducts could be drained for weeks to the relief of patients previously at death's door.

REMOVAL OF THE GALL BLADDER.

With the improvement in technic in common duct cases the removal of the gall bladder has steadily gained in favor. The removal of the gall bladder commonly removes the laboratory in which the stones are formed and does away with the fixation of the gall bladder in an abnormal position, to the increased chances of adhesions and to kinking of the common duct. While commonly no great inconveniences may result from the suture of the gall bladder to the parietes, occasionally the traction on the adherent gall bladder may be very painful. For years after Tait operated on me I was able to row, box and fence without a particle of inconvenience, but an attack of pneumonia last February, with the coughing attending it, made me feel like cursing the fact that my gall bladder was so firmly attached to the parietes. With our increased knowledge of common duct stones and the methods of dealing with them, we need no longer be deterred from excising the gall bladder if the stones are found only in it and the common duct seems free. Kehr, from his enormous experience, believes excision of the gall bladder or cholecystectomy to be the method of choice, and his cholecystectomies have given only a mortality of 3.3 per cent.

DRAINAGE.

Kehr has added another valuable procedure to our means of relief—the drainage of the common and hepatic ducts, which he frequently executes after removal of stones, or even when no stones are present, if there is evidence of infection of the bile ducts. In this way he has succeeded in saving many cases which otherwise would have been hopeless. The same thing may be done at times with less danger even though with diminished certainty of drainage by cholecystostomy. Only recently I had from the operator an account of the case of a very prominent politician who some months after an apparent recovery from typhoid, developed a grave cholangitis accompanied by intense jaundice and high fever. The condition of the patient was so very grave that the gall bladder was simply incised and stitched into the wound. Typhoid bacilli were found in the bile evacuated at the operation, but no stones. Now, a year after operation, bacilli are still found in the bile from the fistula, which is not allowed to close, any attempt at closure being followed by a recrudescence of the old symptoms. In a similar case it would be better if the condition of the patient admitted to open the common duct, stitch in a large rubber tube passed well up to the hepatic ducts, and after tamponing for a few days the belly as a safeguard, irrigate the bile ducts with repeated irrigations of warm normal salt solution. Kehr, in his admirable clinical histories, repeatedly mentions removing in this way most offensive bile, with the result invariably of a marked diminution of sepsis. The neglected cases of gallstone disease by reason of their complications, such as innumerable adhesions, fistulous communications with other organs, obstruction of the pylorus and duodenum by kinking, will demand the most resourceful and skilful surgery, and will even then have a high mortality. In addition with long-continued gallstone disease cancer is not infrequently associated, and then all efforts of relief are futile. However, we can, in the present state of gallstone surgery, promise in uncomplicated cases almost certain cure; in cases of stones in the common duct, unless in persons with other complications, but a slightly increased mortality. While the neglected cases, the cases in which patients and attendants have procrastinated and frittered away time and recuperative powers, the mortality will be high; how high one can not say, but in Kehr's cases this class gave a mortality of 47 per cent.

It therefore becomes our duty when face to face with recurring severe gallstone attacks which threaten to incapacitate or kill the patient, to urge early operation and let the patient bear the onus of the delay, if there is any.

REMARKS ON THE CASES OF THE AUTHOR.

Of 44 gall bladder operations which I have done 6 have proved fatal, as follows: Of 34 uncomplicated cholecystostomies, one died.

CASE 1.—A young woman, aged 30, weighing about 240 pounds, died on the third day when the heart gave out. Only a partial autopsy was allowed, and no peritonitis or hemorrhage was found.

Two complicated cholecystostomies died. They were as follows:

CASE 2.—A woman of 55, a sufferer for 15 years, had vomited almost continuously for three weeks before operation. The stomach was very much enlarged, and I intended to do a gastroenterostomy, but after breaking up adhesions of the gall bladder to the transverse colon, stomach and duodenum and removing 35 stones, the patient was so feeble that I had not the courage of my opinion and the patient died 14 days later, having repeatedly vomited retained food and occasionally blood, gradually becoming weaker. No autopsy allowed.

CASE 3.—The second case was a woman, 54 years of age, who had been ill five weeks before I first saw her, at which time she was deep gold color, septic and constantly vomiting. I could feel an enlarged gall bladder, which was very tender and contained stones which actually grated under my touch. Operation was urged and declined for three weeks. When I then did it I removed 115 gallstones weighing exactly 2 troy ounces. The patient's fever disappeared, the stools contained bile, and appetite was reëstablished, when she suddenly col-

lapsed on the fifth day and died. A partial autopsy showed no hemorrhage nor peritonitis.

In 8 cases I have met with stones in the common duct, in 5 stones were also found in the gall bladder. In 3 of these cases I opened the gall bladder, removing the stones by a cholecystostomy and crushing stones in the common duct by fingers or padded forceps—all three recovered. In 2 cases I opened the common duct only; first finding from exploration through the common duct a rudimentary or contracted gall bladder and after draining the common duct with rubber drainage—both cases recovered.

In 3 cases I opened both the gall bladder and common duct to remove stones. Two died.

CASE 4.—One a woman, 49 years of age, a sufferer for nine years, and intensely jaundiced for nine months before operation. Two stones were removed, one a centimeter in diameter, from the gall bladder, and one slightly larger from the common duct. The common duct was drained, but the patient died from cholemic hemorrhage the second day.

CASE 5.—The second death was in a feeble Armenian, 39 years of age, who had suffered fifteen years and had been deep bronze color for months. I removed from him also one stone from the gall bladder and one from the retroduodenal portion of the common duct. During the month he lived after operation his temperature remained normal or slightly below, and on the thirtieth day he suddenly died from heart collapse, due as much to innutrition as anything. The autopsy showed no peritonitis nor hemorrhage, but great wasting of all tissues.

Of 2 cholecystectomies which I have done on patients who had suffered from gallstones one died.

CASE 6.—The patient was a man 55 years of age, whom I saw in consultation eight years ago, at which time I urged him to have an operation. At that time the attacks of pain were of great severity and recurred very frequently, but he would not entertain the thought of operation. During the eight years which elapsed he was frequently incapacitated by pain and jaundice from labor, and increasing doses of morphin became necessary to give him any comfort. Just before operation he had required one-half grain doses of morphin every three or four hours. I urged operation, and removed a gall bladder, pear-shaped, and about six inches long. The gall bladder contained no stones, but its walls were very much thickened and the mucous membrane very much thickened, inflamed and in some places necrotic. No stone could be detected in the common duct. The cystic duct was ligatured and overcast and the abdomen tamponed. His vessels were sclerosed. During the ten days he lived he had, with increasing frequency, attacks of lividity of hands and weak pulse, but practically a normal or slightly subnormal temperature. The stools, previously white, became normal after operation and he had absolutely no pain. His appetite was fickle and death came with a collapse. No autopsy was allowed.

BROMID OF ETHYL IN ADENOTOMY AND TONSILLOTOMY.*

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GENERAL STATEMENTS.

I wish to preface this study on bromid of ethyl with a few statements, which, though they apply to the use of any one of the general anesthetics in adenotomy and tonsillotomy, yet they more naturally formulate and have particular application in the use of bromid of ethyl in the operations we wish to consider. They will not only serve the operator as guiding principles, but will foreshadow the general limitations of ethyl bromid in operations on adenoids and diseased tonsils.

1. If an indication is found for the removal of tonsillar or adenoid tissue, a minute differential diagnosis of the pathologic condition is absolutely imperative. Otherwise there can be no scientific remedial disposal made of it. There will be selected an improper method of operation, either in the choice of the most suitable anesthetic or of the instruments best adapted. Not only must the eye make an exact measurement of the diameters of the tonsil in its largest dimensions, but it must determine the degree in which the tonsil is sessile or pedunculated, adherent to or free from the faucial pillars, soft, with a tough fibroid frame work or hard fibroid throughout, and whether the peritonsillar areas, including the accessory glands, contain any products of old inflammations.

Of the products of the pharyngeal vault, the mind must not only be ready for an impression of a possible enlarged third tonsil, but for the probability of scattered adenoid crypts, extending around and into the eustachian orifices and down the posterior pharyngeal wall, and even into the posterior nares. Then, and only then, can the operator select the proper anesthetic and the proper instruments.

2. When the indication for operation has been found, the operation should meet completely the indication, that is, it should be done thoroughly.

3. The pain, excitement and shock incident to tonsillotomy and adenotomy make general anesthesia necessary in the large majority of children, and very desirable in all.

4. Even in the former class, that is, in phlegmatic or robust children, local anesthesia does not entirely relieve pain nor insure against undue shock and subsequent prostration.

5. I wish this present study to apply to children only between the ages of 1 and 12; since before the age of one and after the twelfth year, local anesthesia usually suffices.

AN IDEAL ANESTHETIC DEFINED.

From these prefatory statements, I think it will naturally follow that the thoroughly scientific operator will choose between one of the several anesthetics, just as he will select from the many kinds of instruments those which are most suitable to the particular kinds of pathologic tonsillar or adenoid conditions in hand, as well as to adapt the anesthesia and instruments to the age and temperament of the patient.

The properties of an ideal anesthetic should possess:

1. The element of perfect safety.
2. The element of endurance; should benumb long enough to admit of a thorough operation.
3. The element of rapidity of action.
4. Should be pleasurable, non-excitant, a muscular relaxant and respiratory sedative. The latter element should not be so complete as to abolish entirely the respiratory reflexes.
5. Should allow the patient to be placed in the sitting position.

BROMID OF ETHYL IN THE LITERATURE.

Such an ideal anesthetic has not yet been found, but in bromid of ethyl we have, perhaps, one that satisfies these demands more nearly than any other in operations on a certain class of cases of adenoids and diseased tonsils of children.

The use of bromid of ethyl, while it meets these demands perfectly only in properly selected cases, must therefore have definite limitations.

It will be the object of this paper to point out these

* Read before the El Paso County Medical Society, Colorado Springs.

limitations and endeavor to establish its legitimate place among the general anesthetics.

The safety of an anesthetic is no doubt always of the first importance. Everything else should be sacrificed for this. Ether is, of course, generally understood to have the best statistic record for safety. Yet mortality reports for bromid of ethyl seem to have in recent years been as favorable as for ether.

Gurlt[1] (1892) finds one death in 4,550 cases against one death for A.C.E. in 4,118 cases. Later (1894) the same author reports one death in 3,662 cases. Chisholm[2] (1895) used it in 3,000 cases without a death. Gilles[3] (1896) collected 20,000 cases of its administration without a fatality. Hoddes[4] (1899) reports 40,000 cases, in most of which there was no previous examination of the patient and in some enormous doses were given, yet not a single death occurred. Reich[5] (1900) in a most comprehensive survey of the literature found 16 deaths in 60,000 cases. In some of these he found the deaths were due to some of the mistakes of administration, which will be referred to later in this paper.

Theime[6] and Hoffmann[7] each reports cases of death in which toxic symptoms began 24 hours after administration when the autopsy showed parenchymatous degeneration of the heart.

However, in nearly all of the fatal cases from the full record it will be seen that the autopsy revealed pathologic conditions which were present before the anesthetic was administered, either in heart, kidneys or liver. Again, all of these fatal cases were above the age of 20 years.

In all the literature at my command I have not been able to find a death in a child. My own experience with its use covers a period of five years, having administered it in 50 cases in the clinics of the laryngologic department of the Northwestern University, and in about the same number of cases in private practice. I have seen only two cases in which the symptoms were at all alarming, and in one of these I could attribute them to faulty administration and the other to the impurity of the drug.

On surveying the earlier literature it will be found that some fatalities are recorded, but that the number decreases as the proper methods of its administration were learned and proper limitations to its use were made, until in recent years there seem to have been a few deaths as there also have been with ether and chloroform.

PRECAUTIONS TO BE OBSERVED.

I have thus come to believe that bromid of ethyl is a perfectly safe anesthetic when given to a healthy child and under certain precautions. To insure the maximum of safety:

1. There should be a reasonable certainty of the healthiness of the lungs, liver and kidneys. The fact that the child is delicate does not contraindicate its use. Such a child needs simply a smaller dose and will come under anesthesia quicker. The stomach must be empty and the chest unrestricted by the clothing or the arm of the assistant. The precautions necessary to eliminate all danger are based on the known characteristics and physiologic action of the drug; therefore,

2. The drug should be pure. The mistake of using bromid of ethylene should be avoided. This mistake has unfortunately been made. The free bromin which the ethylene specimen contains was responsible for the death of Labardio's[9] case, in which death was due to syncope occasioned from reflex nasal and bronchial irritation of the bromin. The pure specimen is only to be found in seal-brown glass tubes, which were sealed instantly, perfectly volatile, sweet (not garlicky), colorless and non-residuous. I always make it a practice to test the specimen even from these tubes by pouring the proper quantity in a graduate and a little of it on the hand before its administration.

3. It should be given *en masse*. This is imperative, as will be seen from a study of its physiologic action, for it acts directly on the nerve centers, not as an irritant like chloroform, but paralyzes these centers almost immediately. Hence there is no stage of excitement and no initial laryngeal reflex, and little or no muscular rigidity. The brain paralysis is at once followed by dilatation of the cerebral vessels, producing congestion of the brain for a certain period before the heart can be affected. This explains why the sitting posture, so frequently desirable in these operations, is not only perfectly admissible, but an element of safety.

But if now the anesthesia is pushed beyond this brain congestion limit or the brain condition in which the sensitive reflexes are abolished, quite another state is induced which becomes dangerous. This more prolonged cerebral paralysis favors the formation of chemical toxic compounds with the protoplasm of the cortex and other centers, which may prove rapidly fatal, especially when there is organic disease present.[9]

Then, as its safety and success depends on the power of the anesthetic to produce prompt and uninterrupted but limited paralysis, the cone containing the drug should exclude all air and be kept in position till cerebral paralysis and relaxation is complete, and under no circumstances should the cone be reapplied. If air is at all admitted, excitement and rigor result, and if reapplied it is apt to act as an irritant to the brain instead of a sedative, and finally result in dangerous paralysis of the respiratory centers.

4. Time required for anesthesia: No hard and fast rules can be given as to the length of time the cone should be held in place, nor the exact quantity poured into the cone. Both will depend on the temperament of the patient or nerve tone. I have found 5 gm. sufficient for children under 5 years, and 10 gm. the maximum dose up to the age of 12 years, and the time of administration from 20 seconds to 40 seconds. At least operations can always begin one minute after the beginning of administration.

I prefer to give it myself, keeping hold of the disengaged arm with finger on pulse, watching respiration and tone of the arm and neck muscles, but more especially of the eyes, which remain open, for dilitation of the pupils and suffusion of the conjunctivæ. If then the proper moment is chosen for commencement of operation the operator can count on about two minutes for work, after which the patient becomes almost immediately conscious and is able to walk and has no uncomfortable sensations.

RULES FOR USE.

In tracing the causes of the fatal cases recorded, we then have formulated in a negative way the rules for its administration:

1. Do not use bromid of ethylene.
2. Do not use an old or impure solution.
3. Do not administer it in repeated and small quantities. Give *en masse*, admit no air.
4. Do not continue its administration longer than one minute.

The utility of such an ephemeral anesthetic, aside

from its safety, will depend largely on three other conditions:

1. On the dexterity of the operator.
2. On the nature of the pathologic structures.
3. On the possibility of constructing instruments to thoroughly remove the diseased tissues in the given time with the least number of assistants.

The dexterity necessary is perhaps greater than the ordinary operator possesses or one who is not accustomed to cavity operations, but some possess this dexterity by nature, and all those who work in cavities can acquire it.

As to the diseased structures of the tonsils and pharyngeal vault, if both operations are in question and are to be thoroughly done with this anesthetic, the tonsils must be pedunculated, or at least not adherent to the pillars of the fauces, nor must they be entirely submerged under thickened columnar folds. The adenoids must be located in the vault centrally or *en masse*. If the tonsils are sessile or very soft and their frame work toughly fibroid, and the adenoids projecting into the posterior nares, the crypts scattered or actually growing around the eustachian orifices and extending down the posterior wall of the pharynx, as is not infrequently the case, then a thorough removal is not possible with the two-minute anesthesia of bromid of ethyl.

Here, then, comes the limitation of its use, even when the single operation is desired, viz., in the case of the tonsils when they are small sessile, adherent or submerged, and in the case of the adenoids when they are growing from many points and are of such consistency as makes it impossible to remove them with three or four sweeps of the curette.

Yet the somewhat large opportunity I have had for the study of these pathologic adenoid tissues has convinced me that the number of cases suitable for this rapid operation are quite large enough to stimulate careful differential diagnosis, and to justify the construction of instruments, especially adapted for the use of this simple and brief anesthetic. Our endeavors to thus enlarge the use of this anesthetic should be further stimulated by the assurance that many more children who are now suffering from the numerous pernicious deformities occasioned from mouth breathing could be made to submit to this comparatively inexpensive and simple operation, while they now too often are allowed to shrink from the more formidable one of a prolonged anesthetic.

THE INSTRUMENTS NEEDED.

For the removal of the tonsils with bromid of ethyl I have not found an instrument (admirable as some are under other forms of anesthesia) which I could work rapidly enough, especially when the double operations of adenoids and tonsils are to be done. There is not time to empty the forked instruments of the cut-off tonsils. If these were used two of the same size would be required, and all other forms of guillotines would require a third assistant to depress the tongue.

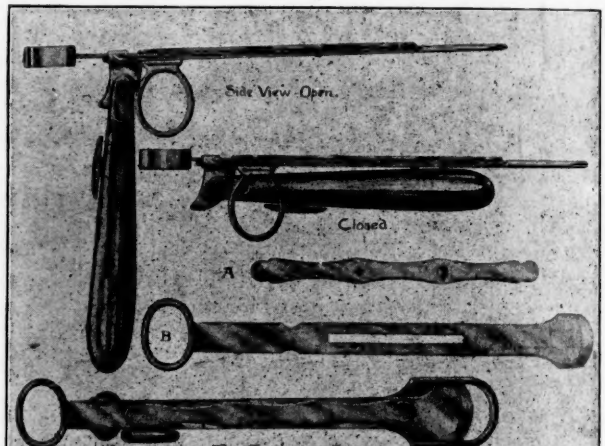
To make bromid of ethyl practical and simplify the whole operation, an instrument is needed that can not only be worked rapidly, but worked with one hand, leaving the other free to depress the tongue, thus dispensing with a third assistant and one which could be directly transferred to the opposite tonsil, completing the excursion of the tonsils in 45 seconds.

I think I have succeeded in modifying the McKenzie guillotine so as to practically fulfill these conditions. I have placed a thumb ring on the heel of the blade and a counter support ring beneath the frame for the index finger to enable the operator to open the fenestrum with one hand. I have also reduced the thickness of the blade and the thickness of the fenestrum ring, thus allowing the ring to burrow more deeply and to more completely surround the tonsil and securing a much closer shave. Then, besides the advantage of rapidity of execution, the pressure one can exert in getting around even a partially submerged tonsil and forcing them into this thin fenestrum ring is much greater and more accurate than is possible with any self-acting forked guillotine.

There are other features of the instrument which have a wider application than its use with bromid of ethyl, features which apply to construction of tonsillotomes in general. The father of English laryngology conceived the true mechanical principles of tonsillotome construction for all time, viz.:

1. That in all cavity work the hand power should be applied at a point parallel to but out of the way of the visual line and the axial line which carries the exerted force.
2. Simplicity of construction, necessary to instrumental asepsis.

While it is true that successful cavity work depends much on the man behind the instrument, yet the instrument which is constructed in accordance with true scientific principles is the best, alike for the hand of the beginner and the experienced operator, and while this guillotine is presented on the merits of special adaptation, it has also the utility of a very broad application.



Not many years ago one heard frequent discussions as to how much of the tonsillar stumps ought to be left. Now the pathologist says, "Leave no stump," "enucleate the tonsil." Surely in all cases all the diseased tissue should be removed, and that means all the enlarged adenoid tissue, and that means all the tissue which by reason of its being diseased more easily absorbs microorganisms and all tissues which interfere with normal nasal respiration. It is not good science to leave any of this behind in the hope that if a part is removed the remnant will "shrink up." This applies both to the lean, nervous, poorly nourished, as well as to the lymphatic or phlegmatic child. The adenoid base should in most cases be removed. This is what is meant by the "operation completely meeting the indication." This is what is meant by thorough work. This can be done with this guillotine under bromid of ethyl, if we limit

its use to the fairly free pedunculated cases; in these one can shave through the pedicle beyond the crypts.

SUMMARY.

To epitomize: For the brief anesthesia of bromid of ethyl all of the forked guillotines and the old patterns of McKenzie are too slow and too clumsy, and those which are intended for the associate use of the vulsellum and the cold snare, while they are the most scientific under chloroform or ether, are not practical under bromid of ethyl.

To make bromid of ethyl thoroughly effective it must be limited to certain carefully selected cases and the use of a guillotine whose fenestrum can be opened with one hand, and the blade and fenestrum ring as thin as adequate strength will permit, and to allow of a hand grasp at once comfortable and so firm that the tonsil can be crowded into the fenestrum to its fullest extent with a precision and quickness commensurate with the ephemeral nature of the anesthetic. To insure this thorough work it will be readily seen that the fenestrum ring must exactly fit the tonsil; hence at least three children's sizes of this tonsillotome are necessary.

The child is wrapped in a stout sheet, firmly pinned, with one arm free and held by the assistant in the intubation position, the gag is then placed and the cone immediately applied. When the anesthesia is complete, as indicated by the above-mentioned signs, and the first 45 seconds have been consumed in excising the tonsils, at least one minute of unconsciousness is left to clear the vault.

For the removal of the adenoids I have found Dr. Casselberry's guillotine as modified by Dr. Gradle quite satisfactory when the growth is simply the enlarged third tonsil centrally located in the vault. When, however, the adenoids extend slightly beyond this area I use the Delstaunch modification of the Gottstein curette, making a central sweep, securing the greater part of the mass in its teeth, then follow with the Kirstein curette. With the latter one can lift up the soft palate to secure a large view of the vault and shave more safely and close to the eustachian orifices. The head of the patient is then quickly brought forward while there is usually still time to enter the vault with the finger to remove any possible remnants.

Finally, as to the technic this method demands: While it is true that it requires great dexterity and accuracy, yet if this is once acquired it seems to me it is more simple than any other method.

Certainly the operator who can do well this double operation with bromid of ethyl would extend the beneficence of these operations to a much greater number of sufferers, for many of the profession and laity who know the baneful consequences of mouth breathing shrink from the remedy, because of the formidableness and great expense of other methods.

But suppose the operator has not this dexterity or the pathologic structures are not suited to the use of ethyl bromid, or this particular structure of instrument is not at hand, then either the tonsillotomy and adenotomy may still be done at two different sittings with bromid of ethyl, since this anesthetic causes so little inconvenience; so I would still speak for bromid of ethyl, but not necessarily for this particular instrument. On the other hand, if the tonsils are sessile or submerged, and require drawing out with the vulsellum, and therefore another anesthetic which will insure longer time, this instrument will still prove more accurate than any with a self-acting fork like the Mathieu's, for the operator can perfectly control and measure with the vulsellum, in the presence of the firm and steady grasp which this instrument gives to the operator, the exact quantity of tonsillar tissue to be removed.

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RUPTURE OF GALL BLADDER OR DUCT FROM VOMITING.

WITH RUPTURE OF APPENDIX IN SAME PATIENT; TWO CASES OF APPENDICITIS; ACUTE YELLOW ATROPHY OF THE LIVER.*

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RUPTURE OF GALL BLADDER OR DUCT.

CASE 1.—A. C. D., aged 53. Four years ago, I am informed, he had two attacks of colic. Aug. 1, 1902, had an attack that resembled biliary colic. In each instance recovered promptly, with no evidence of gallstone in the intervals.

On September 1 last I was called at 2 a. m. to see this patient, who was suffering severely from colic, with greatest pain over gall bladder. He was given a hypodermic of morphia and atropia, hot applications to abdomen. He became easier and I returned home. Two hours later I was again called. He had been vomiting and his pain was now excruciating, and there was marked rigidity of abdominal muscles, with decided localization of pain under the right costal arch. I believed perforation of gall bladder or duct was imminent or had occurred. I returned at 8 o'clock, when his temperature was 102½; rigidity of muscles increased, with increasing tenderness over right epigastrium to vicinity of appendix. I advised immediate operation, but called Dr. Leonard Freeman in consultation. He thought there was evidence of gall bladder disease, but that the appendix was the main source of trouble, and also urged immediate operation, but I could not get the patient on the operating table before 3 p. m., when patient's temperature was 103½. Appendix was first removed. It contained no pus, but was cystic and ruptured at apex. Bile flowed freely from this wound as soon as peritoneum was opened, which demonstrated what I suspected. An incision was made immediately over gall bladder and bile escaped freely in larger quantity, with some thick grumous bile-stained material. Several gallons of warm salt solution were used in the abdomen through both wounds before the water escaped free from bile. The abdominal wall was fat and very thick. The gall bladder was collapsed completely and could not be brought into the wound nor into good view. No stone could be felt in the ducts. The patient had a weak (probably fatty) heart, and his condition was so bad under anesthesia that death seemed imminent; so the operation could not be prolonged, though he was on the table little less than an hour. The exact location of the rupture was, therefore, not determined. Dr. Freeman held the fundus of the bladder with forceps while I packed gauze well around it. His extreme condition necessitated great haste and an unsatisfactory conclusion of the operation. In fact, we were greatly relieved that he did not die on the table. He reacted fairly well. His temperature declined to 99 for two days and then fluctuated between 99½ and 101½ for two days more, when he died from septic peritonitis. His heart remained weak, and nausea vomiting prevented any nourishment by stomach. I regret very much that

* Read at the twelfth annual meeting of the Western Surgical and Gynecological Association, held at St. Joseph, Mo., December 29 and 30, 1902.

I did not have the privilege of a postmortem to complete this report.

The fact that the pain was greatly increased immediately after the severe spell of retching (due partly to drinking warm water), with increased local tenderness, rigidity of abdominal muscles, increased frequency of heart action and fever, strongly indicates that the vomiting was the cause of the rupture.

If Courvoisier's law be correct, that obstruction of the common duct by a stone does not, as a rule, produce distension of the gall bladder, but that obstruction from other causes does, then this case must, in all probability, be regarded as an exception; for the large quantity of escaped bile observed shows there was marked distension. The history of the case, with which I have been quite familiar for several years, has never indicated malignant disease of the parts nor complete obstruction from stone or other cause for any great length of time. The attacks of colic certainly indicated stone, but, as is well known, it may not have caused complete obstruction, unless of a very recent date. There was never decided icterus, but at times slight digestive troubles, with staining of the conjunctiva.

Obstruction of the cystic duct alone would have shown, of course, simply a clear secretion of the gall bladder. Acute cholecystitis does not usually produce jaundice, but does cause distension of the bladder. A stone in the common duct might by ball-valve action, as shown by Fenger, permit intermittent evacuation of the bladder, and this was probably an instance. There were no symptoms of an inflammatory or ulcerative condition preceding the illness.

The recent interesting experiments of Erhardt on animals in dividing the common and hepatic ducts and permitting the bile to discharge freely into the peritoneal cavity show conclusively that healthy, sterile bile will not produce peritonitis, and that bile infected with the colon bacillus does. In the former case the animals finally died of cholemia; in the latter from septic peritonitis. These conclusions are sustained by clinical experience in the reports of cases of traumatic rupture of gall bladder and hepatic and common ducts in man.

Many individuals live for years or a life time with bladder stones without pain or indication of their existence. But when their presence is indicated by attacks of colic or jaundice, no time should be lost in operating, as early operation is more favorable to recovery.

APPENDICITIS.

I report briefly two recent cases of appendicitis because of the interest connected with drainage and phagocytosis.

CASE 2.—W. Y., aged 37, affected with general abdominal pain at 3 a. m., Aug. 14, 1902. I saw him at 7 p. m. of same day. Pains very acute; abdomen not distended and all muscles hard and rigid. Sent to hospital and I operated at 9, eighteen hours from beginning of sickness. As soon as peritoneum was opened, half a pint of sero-purulent fluid escaped. Appendix was strictured by band near cecum and ruptured at apex. It was removed and stump pouched. With long forceps I pushed sterile gauze to the vesico-rectal cul-de-sac and as much more sero-purulent liquid escaped from the wound, none of it offensive. The cul-de-sac and region of the stump were cleaned with dilute peroxid of hydrogen, followed by salt solution—lymph being wiped from coils of the ileum with gauze. A strip of iodoform gauze was applied to the most dependent part of the pelvic cavity and another from the stump, and the small wound closed around the gauze strips.

The gauze was removed at the end of 36 hours. There was not a drop of pus anywhere. Two stitches were now inserted and the wound closed perfectly. From the hour of the operation his recovery was rapid and uneventful, without a single untoward feature, and not a dose of medicine was given. The post-operative history would indicate that drainage was not necessary.

CASE 3.—O. H., Quester, N. M., aged 22, taken with appendicitis Nov. 11, 1902, brought to Denver by his physician, Dr. R. R. Green, and placed in my charge. Patient much better on arrival. Pulse and temperature normal, no tympanitis, tenderness over appendix, but no tumor perceptible on palpation. I have not infrequently found that when an appendicitis patient is manifestly better on the third or fourth day that it was good policy to defer the operation a short time. This was done in this case. His bowels were evacuated with enemas and no food given by the stomach for three or four days. He had vomited considerably in the first two or three days of sickness. He was fed lightly by rectal enemas of peptonized food.

I operated on the 17th of November, when there was not a single symptom of appendicitis except a slight tenderness on deep pressure, yet the appendix enveloped in omentum contained a small quantity of pus and was gangrenous, the gangrene involving a spot of the cecum at base of appendix as large as the little finger nail. The stump was pouched by a double purse-string suture, the first perfectly inverting the gangrenous spot of cecum. The omentum removed with the appendix and abdomen closed without drainage. Examined wound on the fifth day, though pulse and temperature were normal, and finding evidence of pus, opened skin wound when fecal matter was freely discharged, I infer, from sloughing of the small spot of gangrene. Fecal discharge ceased in two or three days, wound soon healed, and patient returned home in three weeks.

This was a fortunate termination and not devoid of a useful suggestion. Drainage from the stump, though it was perfectly inclosed, would have been a safeguard. But it would be better surgery, in a similar case, to remove all gangrenous tissue by excision, even though it involved the entire thickness of the intestinal wall, closing the gut in the usual way. Drainage would not then be indicated.

When in doubt, in a dirty case, with perforation and extravasation, as to whether the abdomen is perfectly cleaned, is it wise to dispense with drainage? Some surgeons, under the teaching of Metschnikoff, now insist that drainage material is more damaging to peritoneal resistance than a little pus, which can safely be entrusted to the battle of the leucocytes. I am not satisfied with the soundness and wisdom of this teaching, though the purpose and action of leucocytosis is admitted. There is always interest in the warfare of pathogenic bacteria when invading the territory of the phagocytes. A wise general will always attack the enemy's base of supplies, knowing that if he succeeds the army will be starved or whipped to death. The wise surgeon will always cut off the march of bacteria by destroying their source of supplies, the focus of infection, and the phagocytes will do the balance. This is Nature's weapon of defense. If drainage forces an outlet to offensive bacteria in accordance with well-defined surgical principles, it must still be used in appropriate cases. If the material used should impair the power of the phagocytes, though in a relatively less degree, it would be no argument against drainage in certain abdominal operations. I do not think it has been shown that the evil is equal to the benefits. I am satisfied that I have saved some patients after peritoneal extravasation by the liberal use even of gauze for drainage. In abdominal operations drainage imperils the integrity of the abdominal wall, therefore predisposes to hernia. It should consequently be dispensed with as soon as possible. But in the enthusiasm for new

theories and facts, in a justifiable belief in the efficacy of hyperleucocytosis, it is not wise to hastily discard surgical procedures which have stood the test of abundant experience.

ACUTE YELLOW ATROPHY OF LIVER.

The following case of acute yellow atrophy of the liver I report in the hope of promoting interest in a disease so very rare that Osler, in a recent work, declares that in a "varied and extensive postmortem and clinical experience no instance has fallen under my observation"; and so fatal that in a recent bibliography of the subject it is stated that reported recoveries were more probably mistaken diagnoses. It occurs usually between 20 and 30 years of age.

CASE 4.—K. M., aged 20. Married 18 months previous to confinement, which occurred in September, 1902, two weeks sooner than expected. Membranes ruptured 36 hours before; presentation and labor were normal. Infant well formed and healthy, weighing seven and one-half pounds; appetite, pulse, temperature, in fact, all conditions local and general seemed perfectly normal until the third day, when appetite disappeared, stomach irritable, with nausea and vomiting on taking food; and in the evening of the day slight momentary wandering, delirium was reported by the nurse; temperature 99 and heart action slightly increased in frequency, though at all times it was slightly weaker than usual. There was no evidence whatever of peritonitis or inflammatory trouble in pelvis or elsewhere. There had been no history of liver disease at any time, nor any evidence of it at the present hour. The next morning at 9 o'clock general icterus was manifest, the patient decidedly weaker, objecting strenuously to being disturbed for any purpose whatever, complained only of being tired, disposed to sleep, with growing stupor or coma. While the nature of the disease was now suspected, the lochia being quite offensive and temperature 99½, it was deemed a prudent measure to irrigate the uterus. This was done in a few hours, but did not affect the steadily increasing coma, and the patient died at 9:30 p. m., the fourth day after confinement.

In consultation with Drs. W. A. Jayne and E. A. Scherrer during the day it was the consensus of opinion that malignant jaundice existed. Postmortem 16 hours after death. Every tissue and organ was stained a deep lemon color; the liver atrophied, weighing two and a half pounds; and the heart soft and fatty and walls thin. Kidneys and spleen practically of normal size and consistency; gall bladder very small, containing hardly a teaspoonful of liquid; the large ducts unobstructed.

Following is the report of the pathologist, Dr. W. C. Mitchell:

"The heart muscle, kidney and portion of liver which were received from you on Sept. 15, 1902, were carefully examined and I have the following to report:

"Heart: Portions of the heart muscle teased out, stained with osmic acid and examined in salt solution showed distinct fatty degeneration of the muscles.

"Liver: The liver cells showed all stages of degeneration from granular cloudiness to complete fatty degeneration.

"Kidneys: No change observable other than the intense yellow staining of the sections as observed in salt solution preparations.

"The heart and liver findings correspond exactly with those found in acute yellow atrophy of the liver."

The real cause of this disease is not known. I can vouch for the natural, healthy childhood of this patient. She never before had a serious illness. Her brief married life was one largely of travel, ease and luxury. Her form was slight and delicate, and her appearance indicated anemia. Her pregnancy was not attended with albuminuria, stomach disorders nor any known diseased condition whatever.

It is a fact that of the two or three hundred reported cases, 60 or 70 per cent. occurred in women, 50 per cent. pregnant, usually resulting in premature labor and the death of the child as well as the mother. The child in this instance is living and healthy. There is no specific history in this case. In the September issue of *Progressive Medicine*, page 211, the statement is made that in 42 cases reported the disease occurred during treatment for secondary syphilis and was due to the specific infection. With our present knowledge the value or truth of this statement may be questioned. The size of the liver is no indication as to the duration of the disease, though it is the chief organ involved.

Whether the condition is primarily a general infectious disease of a rare and unusual nature, or primarily a local infectious disease of the liver is not known. The suggestion of an intestinal origin has no distinct foundation. The resemblance to phosphorous poisoning is striking, though differing in important particulars; and while the urine of both may contain leucin and tyrocin, they are more constant in the former disease. Evidently the disease is rapidly diffused through the circulation, and future investigations will probably disclose a bacterial origin and nature.

ACCESSORY PANCREAS.*

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Anomalies in the development of the pancreas are rather rare occurrences, but when met they may be of practical importance to the clinician.

TYPES OF PANCREATIC ANOMALIES.

Pancreatic anomalies are divided usually into five types:

1. One of the commonest types embraces the abnormalities of the excretory duct, of which Sappey[1] describes the following five varieties: (*a*) The accessory duct of Santorini may be entirely absent. (*b*) The duct of Santorini sometimes is the main excretory duct and the duct of Wirsung the smaller accessory duct. (*c*) The duct of Wirsung occasionally does not pass through the ampulla of Vater, in common with the ductus choledochus, but empties into the duodenum independently. (*d*) Very rarely there are two excretory ducts of about equal size. They run parallel to each other through the entire length of the gland and, at the level where the accessory duct usually joins the duct of Wirsung, they are connected by an anastomosing branch. (*e*) One case has been described in which there were three excretory ducts.

2. The rarest and perhaps the most important type is the "pancreas annulare," first described by Ecker[2] in 1862. In this case the descending portion of the duodenum was encircled by a band of pancreatic tissue which was continuous, on either side of the intestine, with the head of the gland. The annular portion had an excretory duct, which, taking its origin in front and running from before backwards, emptied into the duct of Wirsung. Similar cases have since been reported by Auberg,[3] Symington,[4] Genersich,[5] Summa[6] and Tieken.[7] The head of the pancreas is usually somewhat hypertrophied and the annular portion causes more or less constriction of the intestine, with consequent dilatation above the constricted part.

3. A third variety is described by Hyrtl[8] and called by him "pancreas divisum." It consists of a partial separation of the head from the body of the gland, the two portions being connected only by the duct of Wirsung. This separation he supposes to be caused by pressure of

* From the Pathological Laboratory of Rush Medical College.

the mesenteric vessels on the gland substance during development.

4. A fourth variety is the "pancreas minus" of Winslow, which consists of an accessory pancreatic lobule, springing from the head of the main gland and extending along the anterior wall of the duodenum.

5. The fifth and last variety of pancreatic anomalies, and the one with which we are concerned here, is the "pancreas accessorium," first described by Klob[9] in 1859.

CASES OF ACCESSORY PANCREAS REPORTED.

This abnormality of development is also rare. In a careful search of the literature I was able to find only 20 authenticated cases. Of these 5 were located in the wall of the stomach, 2 in the duodenum, 9 in the jejunum and 4 in the ileum; 3 of them were associated with a diverticulum; 1 in the stomach, and 2 in the ileum.

Klob[9] reported two cases in 1859 and he was the first to give a histologic description of an accessory pancreas. In one of his cases the accessory pancreas was situated in the wall of the greater curvature of the stomach, midway between the fundus and the pylorus. It is described as a lobulated, pale yellow, rounded, glandular swelling, lying between the serosa and muscularis and having the same histologic structure as normal pancreas. In the other case the accessory mass was situated in the posterior wall of the jejunum, about four inches from the point of entrance of the intestine into the mesentery. In neither of these accessory masses could an excretory duct be found, although numerous small ducts were seen between the lobules.

In 1860 Montgomery[10] reported two cases, one of which was situated in the upper part of the jejunum and the other in the middle of the ileum. No detailed description is given of either of these cases, but he states that no excretory ducts could be found.

Zenker[11] reported six cases in 1861. One of these was in the wall of the duodenum, 2.5 cm. from the pylorus of the stomach. Three were in the first coil of the jejunum; two of them close to the duodenum and the other one 16 cm. away from it. In one case two accessory glands were found, one 16 cm. and the other 48 cm. from the duodeno-jejunal junction. The other case presented a diverticulum 5 cm. long and situated 54 cm. above the ileocecal valve. It had a narrow mesentry, rich in fat; and in this adipose tissue, close to the tip of the diverticulum, was found a small nodule of pancreatic tissue, which was connected with the diverticulum by a small excretory duct.

Wagner[12] (1862) reported two cases, one of which was in the small intestine and the other one in the anterior wall of the lesser curvature of the stomach. The latter was elevated 4 mm. above the normal level of the mucosa, which was continued normally over it. In this case no excretory duct was found and no detailed description is given of the case in the intestine.

Gegenbauer[13] (1863) reported a case in the wall of the stomach, near the lesser curvature and 2 cm. from the pylorus. It was slightly elevated above the normal level of the mucosa and was situated between the latter and the muscularis. There was an excretory duct leading into the stomach.

In 1865 Hyrtl[8] described a case which was situated in a fold of the peritoneum (plica pancreatico-lienalis). It had a small duct which communicated with the duct of Wirsung in the tail end of the main gland, and between it and the main gland lay the left gastro-epiploic vessels, both of which were abnormally enlarged.

This case, as was pointed out by Glinski,[14] was probably a case of "pancreas divisum," and not a case of "pancreas accessorium." The tail end of the pancreas, during development, was divided by the abnormal size of the left gastro-epiploic vessels, and thus this case corresponds to the description given by Hyrtl of "pancreas divisum."

Neuman[15] described a case in connection with a diverticulum of the ileum. The diverticulum was situated two feet above the ileocecal valve, was 1¼ inches long and ½ inch in diameter, and in shape resembled the finger of a glove. At its tip was a small nodule of pancreatic tissue about as large as a pea, which was connected with the diverticulum by means of a short excretory duct.

Weichselbaum[16] reported two cases in 1883. One of these was in the wall of the stomach, at the tip of a diverticulum, and the other was in the anterior wall of the descending portion of the duodenum.

Nauwerk[17] reported an accessory pancreas in the wall of the ileum, 2.3 meters above the ileocecal valve. It was 9 cm. in length, rather narrow, and slightly enlarged at the distal end, and was covered by the serosa of the intestine and a layer of subserous fat. At its base of attachment the wall of the intestine was slightly drawn out, forming a shallow depression on the mucous surface, in the center of which was found the opening of an excretory duct. This duct was traced through the center of the entire length of the gland tissue.

Letulle[18] published an article on accessory pancreas in which he makes the statement that they are not at all rare, but may be found in about three out of every one hundred autopsies. He does not, however, give a description of any case, neither does he state how many have come under his observation.

Nicholls[19] has described a case which was found in the beginning of the jejunum. It was roughly oval in shape, measured 1.5 by 1 cm. at the base and was elevated above the general level of the serosa. It also projected slightly into the lumen of the intestine. It was composed of multiple lobules of an acinous structure, which were separated from one another by septa of connective tissue and smooth muscle fibers. These lobules had small excretory ducts.

Glinski[14] described a case occurring in the upper portion of the posterior wall of the stomach, 2 cm. from the pylorus. It formed an oval swelling on both the mucous and the serous surfaces of the stomach wall, and the serosa and mucosa were perfectly normal over it. It measured 4.5 by 3 cm. and was 1 cm. thick at its thickest part. It was composed of lobules of pancreatic tissue, which were identical with normal pancreas. They were embedded in the muscular coat of the stomach and were separated from one another by septa of connective tissue, with here and there a septum composed of smooth muscle fibers. In the connective-tissue septa were numerous small ducts, but no excretory duct was found, although it is believed that there was one. The mucosa was normal, but in the submucosa were glands which appeared to be identical with the glands of Brunner of the duodenum.

Wright[20] has recently reported an interesting case in connection with a congenital umbilical fistula, in a girl 12 years of age. The fistulous tract was removed with the idea of effecting a cure, and the operation was perfectly successful. There was no connection between the fistula and the intestine. In the tissue removed from this tract was found a small spherical nodule of pancreatic tissue, which was arranged in lobules and

identical with normal pancreas. In the septa between the lobules were small ducts, but no excretory duct was found, although it is supposed that there was one and that it communicated with the exterior. As there had always been a clear serous discharge from the fistula it is supposed that this nodule of pancreatic tissue had a secreting function and that its secretion formed the discharge from the fistula.

A CASE OF RECENT OCCURRENCE.

The specimen now under consideration was found by Dr. Le Count in the course of an autopsy of the body of a young woman. The accessory pancreatic mass was located in the wall of the jejunum, about 15 cm. from the duodeno-jejunal junction. It presented itself as a small, yellowish, slightly raised nodule elevated (at its thickest part) 5 mm. above the general level of the serosa; at its base it measured 17 by 22 mm. Sections show the nodule to be composed of pancreatic tissue, which is embedded in the muscular coat of the intestine and in structure identical with normal pancreas; it contains typical islands of Langerhans. In the connective-tissue septa between the lobules are numerous small ducts, lined with a single layer of columnar epithelium, and here and there are bundles of smooth muscle fibers, ramifying through the gland. The ducts, studied in serial sections, are found to run toward the center of the nodule where they form a large duct which takes almost a direct course toward the mucosa and apparently empties into the intestine. The latter point, however, could not be demonstrated positively, because several sections from this region cut unsatisfactorily.

INVESTIGATIONS AS TO DEVELOPMENT OF PANCREAS.

It is evident that we are dealing here with an accessory pancreas which has an excretory duct and is located in the muscular coat of the jejunum. Cases of this kind are not very common, and the question arises, what is the cause of the occasional multiplicity of the pancreas which normally is single? In attempting to answer this question it is necessary to review briefly the early development of the gland. Here we find that investigators differ somewhat, especially as regards the number of original outgrowths (*uranlagen*) from the intestinal tract. All the later investigators agree, however, that it is developed from at least two or more solid diverticula which go out from that part of the primitive foregut which later becomes the duodenum.

Zimmermann[21] made a reproduction of human embryos measuring 7 mm. in length, and found that at this stage the pancreas is represented by two outgrowths, one dorsal and one ventral. The latter, which is found a little more distant from the pylorus than the former, he believes to be an outgrowth from the ductus choledochus and not directly from the foregut.

Hamburger[22] also found two diverticula, which, in the earliest stage studied by him (four weeks) were placed nearly opposite the ductus choledochus and not in connection with it. One of these, the smaller of the two, was placed a little more distant from the pylorus than the other, and in the fifth week was found to have united with the ductus choledochus. In the sixth week the smaller one emptied into the duodenum in common with the ductus choledochus, and its blind end had united with that of the larger (dorsal) one. The small (ventral) outgrowth now begins to grow more rapidly than the dorsal one, the conditions are soon reversed, and the main portion of the pancreas and the duct of Wirsung are developed from the ventral diverticulum, while the dorsal one gives rise to the accessory duct of Santorini and the head of the gland.

Wlassow[23] and Hammar[24] likewise found two diverticula in embryo pigs and squirrels respectively, and Kollmann[25] also is of the opinion that there are two. The latter, however, states also that, according to the latest investigations, it seems quite probable that there are three.

On the other hand, we find that Goeppert,[26] Felix,[27] Kupfer,[28] Stöhr,[29] v. Brunn[30] and Jankelowitz[31] claim to have found three pancreatic diverticula in human embryos and in embryos of cats and some of the lower vetrebrates, as trout, frogs, toads, etc.

Jankelowitz[31] studied human embryos and found that, at an early stage (embryos 4.8 mm. long), the pancreas is represented by a dorsal and a right and a left ventral outgrowth. The ventral, which are in connection with the ductus choledochus, unite early to form one bud, and therefore only two diverticula are found at a little later stage of development. This fact he believes to be sufficient to explain why some investigators have found only two *anlagen* for this gland. In support of this view he points out that the embryo studied by Zimmermann[21] was 7 mm. long and those studied by Hamburger[22] were estimated to be four, five and six weeks old, and represent a stage of development after the fusion of the two ventral diverticula has taken place.

THEORY OF ETIOLOGY OF ANOMALIES.

This seems a reasonable solution of the difficulty, and I believe we are justified in concluding that the pancreas is developed from three embryonal matrices, one dorsal and two ventral. As development goes on the two ventral outgrowths fuse and finally give rise to the greater portion of the gland and the main excretory duct. The dorsal one also develops slowly, fuses with the now single ventral diverticulum and gives rise to the head of the gland and the duct of Santorini. If now for any reason one of the original diverticula fails to unite with the others, but goes on in development, we can easily understand how that would give rise to an accessory pancreas. It is also conceivable that all three diverticula may develop separately and thus form two accessory glands in the same body.

This explanation, which was advanced by Zenker[11] as early as 1861, is now quite generally accepted, and seems to be free from any serious objections. At that time, however, it was supposed that the pancreas develops from a single diverticulum, and Zenker assumed that, under certain abnormal conditions, there might arise two or more outgrowths and give rise to accessory glands. Glinski[14] carefully reviewed the literature on the early development of the gland, and advanced the theory in regard to the origin of accessory pancreas as it is stated above.

Endres,[32] on the other hand, is of the opinion that the pancreas is always developed from a single diverticulum, and that this outgrowth may sometimes be divided by pressure on it from the omphalo-mesenteric vein, the right gastro-epiploic or the inferior pancreatico-duodenal artery, and thus give rise to an accessory gland. This view is now no longer tenable, as it has been shown almost conclusively that the pancreas is not developed from one, but from three diverticula. It is quite probable, however, that the vessels mentioned by Endres may, by abnormal development, prevent the fusion of these diverticula and thus play a very important rôle in the development of accessory pancreas.

The fact that the accessory gland is sometimes found at so great a distance from the main gland can be explained by assuming that the *uranlagen* become separated very early, and one, or two, of them are carried away by the intestine as it increases in length (Glinski).

SLIGHT CLINICAL INTEREST.

In regard to the clinical importance of the pancreatic anomalies just described, the following can be said: The pancreas minus and divisum, although interesting from an anatomic standpoint, are of little practical importance, as they do not bring about any serious pathologic conditions, nor can they be detected during life. Abnormalities of the duct may occasionally be a factor in causing hemorrhagic pancreatitis from impaction of gallstones in the ampulla of Vater (Opie[33]). Annular pancreas may so constrict the bowel as to cause marked dilatation above the point of constriction, as in Tieken's interesting case, or perhaps even complete obstruction. Accessory pancreas may sometimes be a causative factor in the production of diverticula of the intestine, by exerting continuous traction on the intestinal wall, during development (Neumann[15]); or, it may at any time become the starting point of a carcinoma (Nicholls[19]). This has, however, never been observed. If the swelling protrudes into the lumen of the bowel, and attains a considerable size, it might produce some obstruction to the movement of the intestinal contents; or, perhaps it might cause an intussusception by continuous traction on the inner surface of the intestinal wall, from the passage of the contents over it.

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POISONED WOUNDS BY THE IMPLEMENTS OF WARFARE.

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(Concluded from p. 990.)

V. INFLICTION OF POISONED WOUNDS OR SEVERE INFECTIONS INTO ANIMALS BY VARIOUS MEANS IN FIRING.

The work narrated in the preceding experiments by foreign workers refers to the transmission of bacteria by the act of firing when the organism is placed on the projectile, in the barrel or on cloth. My earlier experiments, already cited, proved the transmission of bacteria when placed on the ball or in the powder. The experiments to be referred to now were undertaken to show whether transmission could be effected when the organism is placed at any point from the explosive to the point of impact, namely, in the powder, on the wad, on the projectile, in the barrel, on cloth in the trajectory and lastly on the integument at the point of entrance.

Anthrax.—Infection by the implements of warfare was incidentally touched on when we were considering poisoned arrows. It will be remembered that Siegfried mentions that the nations of East Equatorial Africa were said to poison their arrows with the *Bacillus anthracis*. In the references at my disposal I am unable to verify the statement.

Those who will recall the tragedy at Buffalo last year may remember the account of the press reports which referred to the circular found on the assassin's body, which read in the form of instructions on the method of taking life, as recommended by the Nihilists, of whom the perpetrator was said to have been a follower. Among the methods of poisoning, to more effectually insure death, the use of anthrax was noted. If this method of adding to the chances of death in a criminal attempt was ever practiced there is no record of it, to my knowledge, in the literature, yet the septicemia from this source is so similar to that from other micro-organisms that such an infection contracted in the manner mentioned would necessarily remain undetected unless bacteriologic examination of the blood and other tissues were made; on the other hand, the clinical features of malignant edema, tetanus, and the gas bacillus infection are so striking that they have served to identify those infections in a certain percentage of gunshot wounds, long before their biologic features had been determined. It follows, therefore, that to determine the relative frequency of anthrax and all other infections after gunshot wounds, we must depend henceforth on a proper examination of the tissues. Again, whether such an infection through the medium of a poisoned bullet fired from a weapon was a possibility, constituted a source of much doubt before the experiments which I am about to detail were undertaken. This skepticism was more than likely the outcome of the erroneous notion formerly entertained that bullets were purified by the heat of firing. It is interesting to note that Noble and Abel give the amount of heat generated in the chamber of weapons as follows: Krag-Jorgensen, .30 cal., 2,600° C.; Springfield, .45 cal., 2,400° C. This notion also found ample clinical evidence because we know that the majority of gunshot wounds when treated with a clean surgical dressing exhibit few or no signs of sepsis, and, to speak generally, we regard the wounds of this class as surgically pure. Again, when precautions to prevent sepsis have been observed, cases have exhibited some of the most virulent forms of infection, such as those of tetanus, malignant edema, gas bacillus, etc.

Formerly, when bullets were supposed to have been entirely disinfected by the heat incident to the ignition of the powder charge, the source of infection was only supposed to occur: (*a*) from the clothing when this was first penetrated by the ball, and (*b*) from the skin at the point of impact, which, as we know, is never clean. Whether infection could come from the ball or other sources remained to be solved. The following experiments at the proximal ranges were done in 1892: Two white rabbits were shot with a .22 caliber revolver. The projectiles were previously infected by smearing the conical end with a culture of anthrax germs from a slant of agar-agar which was prepared from the blood of a

gray mouse that had died from the effects of this micro-organism the day before. In the case of the first rabbit the ball passed through the left ear near the skull. The animal died three days later, and the presence of the *Bacillus anthracis* was confirmed in the blood of the heart, spleen, liver, etc. In the second animal the missile entered the external surface of the left thigh and lodged under the skin of the sacrum. Although droopy on the fourth day, he made a gradual and complete recovery.

We next shot a bull calf with a .38 caliber double-action Colt's revolver, the projectile having been infected with anthrax culture, as in the case of the rabbits. The ball entered the outer aspect of the left thigh and lodged in the perineum. The animal died on the third day, and cover-slip preparations from the blood of the spleen, liver and heart showed the presence of anthrax bacilli.

The next experiments were conducted with the high velocity modified Springfield rifle of .30 caliber, propelling a German-silver-clad bullet weighing 230 grains, with an initial velocity of 2,200 foot seconds. It was impressed with 36 grains of smokeless powder. Four rabbits were used altogether. They were shot through the ears at a distance of ten feet. The projectiles were in each instance infected, at the conical end, with a fresh culture of the *Bacillus anthracis* on agar-agar. The first animal died from shock two hours after the injury, the ball having penetrated both ears low down and the intervening scalp. Twelve cover-slip and two agar-agar slants prepared from the blood in the track of the bullet twenty-four hours after death failed to show the presence of anthrax. The results were likewise negative in rabbit No. 2, and positive in 3 and 4.

As stated, the foregoing experiments were conducted at the relatively short ranges. It was next in order to show the fate of micro-organisms on projectiles when fired at the actual ranges of, say, 300 and 500 yards. The following experiments were undertaken at Fort Logan in 1895, as follows:

Five sheep were shot at 300 and 500 yards with the 230-grain steel-jacketed bullet of the .30 caliber Krag-Jorgensen rifle. The projectile was propelled by 37 grains of Peyton smokeless powder. The point of each projectile was infected a few moments before the firing took place with a recent virulent culture of the *Bacillus anthracis* on an agar-agar slant. Four of the animals were wounded. One was killed outright; the bullet from the 500-yard stand passed through the large vessels of the neck and caused death by hemorrhage in a few minutes. Of the wounded animals, No. 1 received a wound at 500 yards on the inside of the right ham near the shank. The projectile passed out, fracturing the ham bone. Death ensued 60 hours after the injury. Cover-slip preparations from the blood of the liver, spleen and heart, stained with a watery solution of gentian violet, revealed the *Bacillus anthracis*. No. 4 was hit at 300 yards in the left shoulder, the projectile making its exit on the right side of the neck. The animal never recovered from the effects of the injury sufficiently to enable him to regain his feet. He refused food and drink from the time he was shot until he died, on the fifth day. Cover-slips prepared from the blood of the spleen, liver and heart showed anthrax bacilli in nearly every field. The other two animals, shot in the skin of the abdomen and in the right foreleg, respectively, at 300 yards, recovered entirely.

These results show conclusively that the infection of anthrax can be carried at long range and that it is possible to thus infect susceptible animals.

Following on the evidence that unconsumed grains of black and smokeless powders carry specific micro-organisms into media, it was of interest to know if there was enough of a culture so carried to communicate infection, or whether the modifying influences of heat caused attenuation enough to prevent the typical picture of a given infection. For this purpose we infected black and smokeless powders with a culture of anthrax and fired into rabbits as follows:

Black Gunpowder.—We loaded six shells with 18 grains of powder in each shell. The powder was infected with a culture of anthrax. The weapon used was a .38 caliber Colt's revolver, range one foot. Six animals were selected, and each animal was shot in one or both ears. In four of the animals the unburnt grains of powder failed to penetrate the skin entirely, the grains projected above the surface, while in the other two the powder grains were for the most part well embedded in the skin and areolar tissue. The latter two animals sickened on the third day. One of them died on the fourth day, while the other recovered entirely. Cover-slips prepared from the blood of the heart, spleen and liver of the dead animal stained in a watery solution of methylene blue revealed anthrax bacilli in nearly every field.

Smokeless Powder.—Of three rabbits shot in the ears at a distance of four feet by the Krag-Jorgensen rifle loaded with 37 grains (blank) of the Peyton powder, which had previously been contaminated with anthrax spores in the manner already described when speaking of infection of black gunpowder, one of the animals sickened on the third day and died on the fifth day. Cover-slips properly prepared from the blood of the heart, liver and spleen revealed the presence of anthrax bacilli, though but few in number. Sections of the liver and spleen, stained by Gram's method, exhibited the presence of the organism in the vessels.

Streptococcus of Marmorek.—Müller has lately worked with infected bullets to show whether micro-organisms carried by a ball still retain their virulence. With this object in view he used rabbits. They were shot in the fleshy part of the ham under strict precautions. The part to be traversed was shaved, washed with soap and water and treated with an antiseptic poultice before the firing commenced, and the wounded animals were taken to a dressing room and their wounds attended to with scrupulous care to prevent other infection. The balls of the steel-clad type from the military rifle of the Swiss were infected with the *Streptococcus of Marmorek* which kills rabbits in 20 to 48 hours. In the first series of experiments he inoculated the projectiles on the point; in the second, the organism was placed on the body of the bullets. In the first series the animals, four in number, succumbed to the infection in less than 24 hours; in the second series the animals, three in all, died in 30 to 36 hours. The greater length of time required to kill in the latter cases is attributed by the author to the reduction of the dose by loss in the friction of the projectile against the inside of the barrel. He next placed the organism on the inside of the barrel, and then again on cloths, in order to learn whether infection might be carried by a sterile ball in its passage through an infected barrel, or infected cloth. He demonstrated by firing into rabbits as before that infection was carried from both the barrel and cloth, the animals dying from the streptococcus infection. It would seem from the foregoing experiments that the heat imparted to the ball by the act of ignition and the friction in the

barrel, although the projectile is impressed with a velocity of 600 m.s., is not enough to entirely destroy the streptococcus nor to modify its virulence.

Tetanus on Projectiles.—In experiments conducted in 1892 with bullets of various calibers, we failed to communicate tetanus to horses. On the other hand, as will be shown later, Strick has more recently demonstrated that five out of six rabbits died from tetanus communicated by bullets infected with a culture of the organism, also Nimier and Vincent succeeded in transmitting tetanus to a rabbit with fatal results by shooting with smokeless powder previously infected with a culture of tetanus.

In recent experiments on animals we succeeded in communicating tetanus in 69.5 per cent. of the cases by methods as follows: The experiments were conducted with the .22 caliber toy pistol. An artificial tetanus earth was made by mixing one quart of sterile earth with one agar-agar culture, after the toxin had been destroyed by heating at 65° C. for five minutes. The animals were shot in the fleshy part of the thigh.

(*a*) *Transmission by Infecting Black Gunpowder.*—One-half grain of tetanus earth was mixed with the powder in each of three blank cartridges with which three white rats were shot at a distance of two inches. Two out of the three animals developed tetanus and died on the fifth and sixth day respectively.

(*b*) *Transmission by Infecting the Wads with the Tetanus Earth.*—Four wads were infected on their outer surface with a half grain each of the earth. Four rats were shot into as stated above. Two died immediately from shock and the other two succumbed five days later from tetanus.

(*c*) *Transmission by Placing the Earth on the Projectile.*—These were infected by placing the earth in three grooves running parallel with the long axis of the bullet. Three rabbits shot died with typical symptoms of tetanus on the sixth, seventh and eighth day respectively. Out of three guinea-pigs shot in the same way, two died on the sixth and seventh day.

(*d*) *Transmission by Placing One Grain of the Tetanus Earth in the Barrel.*—Three white rats were shot at two inches with blank cartridges. Two of the animals died from tetanus on the fifth day.

(*e*) *Transmission by Shooting a Blank Cartridge Through a Piece of Gauze Previously Contaminated with the Tetanus Earth, the Gauze Lying Against the Part.*—Out of five white rats shot in this manner three succumbed to tetanus on the fifth and sixth day.

(*f*) *Transmission by Placing One Grain of Wet Tetanus Earth on the Skin of the Animal at the Point Penetrated by the Charge.*—Four animals were thus shot with blank cartridges, two dying of typical tetanus on the fifth and sixth day.

(*g*) *Transmission by Infecting Smokeless Powder.*—The powder was infected as before. Three white rats were shot at a range of two inches. One of them developed tetanus on the fifth day and eventually recovered. The other two were negative.

The control animals shot in the above manner without the use of tetanus earth gave negative results without exception. As stated already the fatality from tetanus attending these experiments aggregates 69.5 per cent. It is fair to assume that this percentage would have been greater with a pure culture of tetanus. The artificial tetanus earth was used to simulate the actual conditions under which tetanus infections usually occur.

Bacillus Aerogenes Capsulatus.—Welch has shown in his Shattuck Lecture that infection from this organism is most frequently seen in compound fractures, and next in gunshot wounds. In recent experiments to demonstrate the transmission of this bacillus we obtained positive results. We infected three guinea-pigs by shooting them with an infected bullet from the toy pistol at close range. One died on the second day from general peritonitis, the ball having penetrated the abdomen; we killed the other two on the third day. They were placed in the incubator for twelve hours, when the typical emphysematous appearance was noted. The bacillus was obtained from the blood, serous membranes and subcutaneous tissue. The identity of the organism was established by means of the rabbit test described by Welch. Two control animals shot in the same manner were negative. The possibility of transmitting this organism by the various other means in shooting was taken for granted.

To determine the effect of firing on vegetable poisons we conducted the following experiments with curare and ricin as examples of powerful poisons when introduced into wounds.

Curare: Rats were shot in the thigh with a .22 caliber pistol loaded with blank ammunition. About one-fortieth of a grain of the sulphate was used in each experiment.

In Black Gunpowder: Out of four animals thus inoculated two died immediately with typical symptoms of the drug. The other two recovered.

On the Wad: Two animals thus inoculated died immediately.

In the Barrel: Two of the four animals inoculated died.

On Cloth: Of the two animals experimented on one died and the other recovered.

On the Skin: Of two animals thus shot both died.

Control animals inoculated with a similar dose subcutaneously administered died without exception.

Ricin: Two rats were shot as above stated, the ricin being placed on the wad; one recovered, and one died in the same time as the control animal, with the usual typical lesions.

The foregoing results with vegetable poisons were so convincing that the possibility of inflicting poisoned wounds with firearms in the various ways mentioned was considered certain, and pursued no further.

That poisoned wounds or infections can be communicated by the implements of warfare into susceptible animals and into man is well established by experimentation. In order to emphasize these facts let us take tetanus as an example of the infections in general and let us consider its occurrence in wounds, and in gunshot wounds in particular, as shown by clinical evidence.

VI. CLINICAL EVIDENCE OF POISONED WOUNDS, AND THE CHARACTER OF THE LESIONS AS A PREDISPOSING FACTOR.

Before we enter on a more extended discussion of the transmission of tetanus by the missiles from firearms as shown by clinical evidence, we may recall the fact that tetanus earth was a favorite poison among the substances used to poison arrows, notably by the inhabitants of the New Hebrides. We may recall the fact also that the occurrence of tetanus after gunshot injuries was so frequent, and the fatality attending this complication was so large, that few of the infections in war wounds have been more extensively dwelt on by the older writers on military surgery. Surgeons in civil and military practice have seen the disease follow gunshot wounds so frequently that a conviction has

existed in the minds of many that these wounds possess an etiologic factor of their own, which has been variously attributed to the ball, the powder, the wad or the character of the lesion made by the mechanical effects of the projectile on the tissues. Of 246,712 gunshot wounds which occurred during the Civil War, Otis informs us that 505 of these were complicated by tetanus, or one case of tetanus to every 500 cases of injury.

Its frequency in war wounds has been attested by many writers besides Otis. Table A from Nimier and Laval by Mathieu, shows its occurrence in a number of the great wars, the general average being about one case of tetanus in every 300 wounded.

TABLE A.—TETANUS IN WAR. (BY MATHIEU.)

Wars.	Cases of Tetanus.	No. of Wounded.	Percentage.
British Army in India (1782)...	20	810	1/40 or 2.47
British Army in Spain (1811-14)	263	20,683	1/78 or 1.25
British Army in Crimea.....	26	12,094	1/465 or 0.21
Spanish Army in Morocco—wounded cared for in Africa...	1	56	1/56 or 1.78
Spanish Army in Morocco—wounded cared for in Spain...	4	3,920	1/980 or 0.10
French Army in Cairo (1798)...	7	200	1/28 or 3.50
French Army before Constantinople (1836)	10	176	1/17 or 5.68
French Army in Crimea.....	120	39,868	1/332 or 0.30
French - Sardinian Hospitals (1859).....	153	21,967	1/143 or 0.69
Prussian Army (1864).....	14	1,968	1/140 or 0.71
Hanoverian Army after Langensalza (1866)	13	1,092	1/84 or 1.20
German Army (1870-71).....	350	99,566	1/285 or 0.35
Austrian Army in Bosnia (1878)	16	3,878	1/234 or 0.41
United States Army, Civil War..	505	246,712	1/488 or 0.20

In this country the frequency of the affection after wounds by the toy pistol has called forth renewed attention to the etiologic factors involved. The wounds referred to are usually inflicted by the ordinary .22 caliber revolver, carrying six blank cartridges, loaded with an average of three grains of black powder held in place by a pasteboard wad. The custom of celebrating the anniversary of our national independence by the use of explosives has grouped these cases very much in the same way that we find them in the statistics of the different wars. Until the use of the toy pistol was prohibited by a number of the state legislatures, the infection from this source was striking in frequency. Thus Park, whose attention was specially called to the subject, informs us that sixty cases of tetanus followed toy-pistol injuries in Chicago during the month of July, 1881. There were 38 cases of tetanus in New York City in 1899; 33 cases in 1900, and 27 cases in 1901—making a total of 98 cases. The health reports show that 35 per cent. of the cases occurred in the month of July. The reports of the last three years from the Board of Health of Philadelphia show that of 29 traumatic cases reported in males, 12 of them, or 41 per cent., were from some form of gunshot injury, the toy pistol being the most frequent offender.

The occurrence of tetanus after injury by blank ammunition has been the subject of special study by a number of investigators. The work has been directed towards the bacteriology of the powder and the wad, by means of cultures and inoculation into animals. The possible presence of the *Bacillus nicolaier* in either or both of these (the powder and the wad) should not be considered improbable. In the former, such a contamination might easily be the result of accident in the same way that dust containing the spores of the organism finds its way into the explosive by the ordinary operations of handling. As to the wads, our investigations go to show that in the process of manufacture the cardboard and other materials for wadding undergo no treatment that is calculated to destroy resistant bacteria that primarily exist in the trashy materials employed, viz.: dirty rags, old paper, wood pulp, wool, etc.

Wells of Chicago had his attention drawn specially to the epidemic of tetanus which followed July 4, 1899, having noted five cases in the Cook County Hospital and private practice together. All the cases were the results of wounds from blank cartridges, 60 per cent. of the injuries being in the left hand.

In order to determine the possible presence of tetanus in the cartridges, 200 rounds of the ammunition were examined by him from five different manufacturers with negative results. Cultural inoculation experiments were made as follows: The wads, powder and shells were treated by the Kitasato method for isolating the tetanus bacillus, i. e., by heating to 85° C. for 45 minutes to kill all but resisting spores. Glucose agar was generally used, but bouillon, glycerin agar and gelatin were tried. These cultures failing to show the organism sought, others were made without the preliminary application of heat, with the same negative results. A series of inoculations of guinea-pigs and house mice followed. Some deaths from pus infection were noted, but the tetanus bacillus was never found. The inoculations were made in various series with wads, powder, agar and bouillon cultures with and without preliminary heating.

The negative results of his well-directed efforts were in the nature of a surprise, and naturally disappointing, since he had good reason to suspect the source of infection to come from the ammunition as a result of accidental contamination at least.

In the report of the Health Department of Boston, Mass., for 1900, reference is made to the occurrence of seven cases of tetanus following July 4 of the same year. The director of the laboratory made many ineffectual attempts to locate the tetanus bacillus in the ammunition. "The method consisted in: (1) separating the wads, powder and shells of 350 cartridges of different calibers; (2) injecting these directly, or extracts and anaërobic cultures made from them, into guinea-pigs and rabbits; (3) microscopic examination of the cultures, extracts, etc. Nothing resembling the tetanus bacillus was observed, nor did any of the animals exhibit signs of tetanus." In his conclusion the author attributes the occurrence of the infection to the serious nature of the injury and the circumstances under which it occurs.

In our experiments we examined:

1. Forty-one samples of powder obtained from cartridges of varying calibers.
2. Thirty samples of powder from six different kinds of firecrackers.
3. Twenty-four wads from the toy-pistol ammunition.
4. Thirty samples of cardboard from the different kinds of firecrackers above cited.

Attempts were made to determine the presence of tetanus or malignant edema by inoculation directly into animals, by anaërobic cultures and by inoculation of these cultures. Inoculations were also made into hematomata, which will be shown later to give a special predisposition to infection. In no case were we able to determine the presence of the organisms mentioned.

We find, then, that out of 675 samples of powders and wads examined, the *Bacillus of Nicolaier* was absent in every instance. From the foregoing it is apparent that we must look to other sources of infection than those suggested in the ammunition.

In considering the source of infection in gunshot wounds which, reasoning by exclusion, can only arise from, (1) the integument at the seat of injury, (2) the

clothing traversed by the missile, (3) accidental and criminal contamination of the ammunition, (4) infection of the gun barrel; there are certain special features in these wounds that favor the development of tetanus and other infections to a marked degree, and these features deserve special consideration.

We may start out with the proposition that all wounds are more or less infected; that is, that no wound is bacteriologically clean. Such an assumption is even true of operative wounds done under the strictest technic. Notwithstanding this fact, we know that these wounds, though contaminated, for all practical purposes in surgical practice heal perfectly, without pus, and give the best of results. The factors of a suitable soil, on the one hand, and a proper degree of virulence, on the other, play an important rôle in the development of infection in all wounds; and, as we will show, the former of these factors has a special application in gunshot wounds.

The experiments of Lwowitch, Strick and Dorst on the development of infection in the presence of hematomata have an interesting application in this instance, because we know that hematomata, more or less extensive, frequently accompany the lesion in a gunshot wound.

Lwowitch obtained the spores of the *Bacillus nicolaier* from a bouillon culture. After subjecting them to a temperature of 70° C. for an hour he injected an aqueous solution of one-half to one c.c. under the skin or in the muscles of the thigh of a rabbit without effect. If, on the contrary, the injection was preceded by creating a hematoma by cutting the femoral artery near the knee and the same amount of the aqueous solution was then injected in the hematoma, tetanus developed, at first localized, then general in character, finally ending in death. This showed that the hematoma favored the development of tetanus to a high degree.

The work of Strick was projected on the same lines. He produced a hematoma by cutting the femoral artery in five rabbits, and he injected a certain spore mass of tetanus in each hematoma. All of the animals developed tetanus in five to six days, and death followed in one to two days later. As a control he injected ten times the known amount of tetanus directly into the thigh muscles of six animals with negative results. He found that a hematoma favored the development of tetanus so much that 50 times the spore mass could be placed in the tissue of the control animals without any reaction taking place. In order to prove that the development of the infection was the result of the hematoma and not to the loss of resistance incident to shock or hemorrhage, he produced a hematoma in one of the thighs of six control animals, and in the other thigh he injected 20, 40 and 100 times the spore mass; whilst in six other animals he injected the regular amount of the spore mass into the hematomata. The animals directly injected in the hematomata died of tetanus in six to eight days, whilst in those animals with a hematoma in one leg and the injection in the other, there was no reaction. In his final experiments he found that the predisposition to tetanus from a hematoma was so great that a dose 1,000 less than that which produces tetanus in a sound animal was sufficient to provoke tetanus when it was injected in a hematoma.

In order to show the relative predisposition to the development of tetanus between a hematoma and the lesion found in a gunshot wound, he shot six rabbits with bullets primarily infected with tetanus. The animals developed tetanus on the third day and died on the fifth. He concludes that gunshot wounds, in consequence of the tissue lesion, offer an unusually favorable soil for the development of tetanus. Compared to the infection developed by injecting in hematomata the onset of symptoms is twice as quick and death ensues earlier.

Dorst has shown that the coefficient of susceptibility increases in hematomata when other organisms than tetanus are employed. He demonstrated this as follows: he made 34 experiments on rabbits with staphylococcus aureus and pneumococcus. He found that one-eighth of a platinum loop of the former caused an abscess in a hematoma, whilst it required one-fourth of a loop to produce death. The controls injected with the same dose in the muscle tissue or subcutaneously showed no reaction. The controls showed reaction, however, with four loops, and it required as much as eight loops to cause death. He next employed the pneumococcus, to which the rabbit is specially susceptible. He used an aqueous solution of the organism of which one-fourth to one-tenth c.c. produced no effect when injected in muscle tissue; and yet one-hundreth of a c.c. of the same solution produced death when injected in a hematoma.

The results of the experiments by Lwowitch, Strick and Dorst show conclusively that hematomata augment the susceptibility to infection. In regard to the susceptibility conferred by hematomata and the lesion in gunshot wounds, we find that they confer great susceptibility, and we may recall that Strick goes so far as to say that the onset of symptoms in animals shot with tetanus balls is twice as quick as it is after injecting the spore mass into hematomata. If all the pathogenic microbes were as virulent as tetanus, and all gunshot wounds presented suitable hematomata, it follows that infection would occur in every instance. We are aware of the varying degree of virulence of different bacteria and we can demonstrate also the varying degrees of hematomata and other lesions in gunshot wounds which account in great measure for the occurrence of infection in some cases and its absence in others.

Another condition entering into the question of susceptibility to infection is that of necrosis arising from burning. The following experiments were suggested because clinically tetanus is often seen to follow a burn from various causes, and also because of its frequent occurrence in powder burn, in which there is more or less burning or singeing in addition to the lesion that the force of the explosion confers. We experimented on eight guinea-pigs by inoculating tetanus earth into incised and burned wounds. In four of the animals we made a wound by burning through the skin of the thigh with a red-hot knife, and in the other four we made a simple incised wound. An amount of the tetanus earth that could be held on the end of a hat-pin was placed in each wound of the two series of animals. Those having burned wounds sickened on the third day and died on the fifth day after inoculation, with typical symptoms of tetanus. The animals inoculated into simple incised wounds all recovered, at no time manifesting any symptoms of tetanus. It is thus seen that experimentally, as well as clinically, we must consider burning as an additional factor in augmenting the susceptibility to infection, and one that necessarily enters into gunshot wounds at close quarter.

The extent of the lesion in gunshot wounds, as we know, is modified by a number of factors, and these are

well exemplified by comparing the character of the wound conferred by the reduced caliber bullet of the present military rifle, which is so often referred to as the humane bullet, with that inflicted by the larger caliber bullet of the military rifle in use two decades ago. In order to show the difference in the susceptibility of the lesion to infection, let us again take up tetanus as an example of the infections. I believe such a study will convince us that the reduction in the amount of infection in recent wars is not altogether due to antisepsis, and that much of the credit should be attributed to the change in the armament.

VII. DIFFERENCE IN THE LESION OF THE OLD AND NEW ARMAMENT ONE OF THE PROBABLE CAUSES OF THE REDUCTION OF TETANUS IN WAR.

The humane features of the new military rifle are so generally accepted that it will suffice to review briefly the differences in the old and new armament that have led to the material reduction of destructive effects in the latter. From 1886 to 1893 all the armies of the world, one after another, proceeded to change their military rifle, which formerly employed a cylindro-conoidal lead bullet, weighing approximately 500 grains and of about .45 caliber. The projectile was impressed by a velocity of translation of about 1,300 f.s., with a velocity of rotation on its long axis something like 800 turns per second. The explosive charge for our own army rifle was 70 grains of black powder, which approximated very nearly that of other armies. Between the dates above mentioned all the governments except China changed their armament to the reduced caliber rifle of a type corresponding to the Krag-Jorgensen, in use at present in the United States Army, the chief features of which are, so far as the surgeon is concerned, as follows: The projectile is .30 calibers, composed of a lead nucleus enclosed in a hard steel armor. Its weight is 220 grains, and it is impressed by a velocity of translation of 2,200 f.s. The velocity of rotation on its long axis at the muzzle is 2,400 turns per second. It is thus seen that the bullet of the military rifle of to-day as compared to that of a generation since has been reduced 15 calibers in diameter and 280 grains in weight, while the velocity of translation has been nearly doubled and that of rotation has been trebled, and it has this additional feature: on account of its hard steel envelope it is not susceptible to deformation by any amount of resistance in the human body. Because of these striking differences in the two projectiles, the character of the lesion in gunshot wounds in war has been very much modified. The so-called humane effects of the reduced caliber bullet have been specially noted in the wounds of (1) soft parts, (2) joint ends of bones, and (3) shafts of long bones.

Soft Parts.—With the old 500-grain bullet, in the soft parts the wounds were more liable to be lacerated at all the ranges, and this was especially so in the middle and remote ranges as the remaining velocity diminished, or when the projectile was deformed by ricochet against resistant structures before impact. Such wounds were always infected by the large, irregular surface of the lead which afforded every opportunity for the lodgment of dirt. The local destruction of tissue was not only marked in the limits of the channel track, but the resulting traumatism was evident in hemorrhages and conditions inviting necrosis of the parts beyond.

The extent of the traumatism by the hard, steel-clad bullet with polished exterior is much less when the normal bullet impressed with superior velocity traverses soft parts only. The lesion partakes more of the character of an incised wound. The area of destruction about the channel track is much less; the opportunities for necrosis are practically *nil*. The amount of infection is less because the steel mantle retains its smooth exterior better than the lead, which was easily indented. In ricochet, if the projectile encounters much resistance, it disintegrates into small fragments which readily lose their velocity and therefore their value as missiles. A slight amount of resistance only serves to flatten or indent the conical end of the steel mantle without grooving or furrowing, which is so apt to be the case with the softer metal, while the amount of infection transported by the steel-clad bullet is at all times less than one finds in the case of the lead bullet.

The experiments of Karlinski have a special bearing on the amount of lesion inflicted and dirt carried by the two bullets. By shooting in gelatin cylinders he noticed more extensive fissuring with the large caliber leaden bullet. Particles of cloth, thread, etc., carried by the ball penetrated into the fissures, eccentrically disposed about the channel track, to a distance of 13 cm. The experiments were repeated on a dog whose hindquarters were enveloped in a green cloth. At 100 meters the 6 mm. jacketed bullet passed through the hams and carried particles of cloth to a depth of 2 cm. about the channel track.

Schwarzenbach has experimented on animals in the same direction with similar results, and his views of primary infection which are entertained by Brunner, Karlinski and others, are based on experimental proof. We know to-day that enough extraneous matter enters a gunshot wound at the time of its occurrence to account for all the phenomena of infection that often develop. We are no longer justified in stating that the fate of a patient who has sustained a gunshot wound is in the hands of the one who applies the first dressing. Such teaching is not only erroneous, but it is misleading and dangerous. In speaking thus we surmise that the surgeon has taken the usual precautions to prevent additional infection. We must take for granted, also, that he has refrained from using so much as a clean probe or his clean finger to explore the wound, a procedure which, in either case, is apt to add to the lesion and render the soil more favorable to the development of existing infection. Unless the reasons for interference are urgent, we should remember that the less we do the more we accomplish, or as Koller, one of Tavel's collaborators, has aptly put it, "moins on fait, mieux on fait."

Joint Ends of Bones.—Here the amount of destruction generally corresponds to the sectional area of the bullet. The lesion is marked by a clean-cut perforation which tends to heal rapidly with a clean dressing and fixation.

Shafts of Long Bones.—When the shafts of the long bones are traversed in the ranges extending to about 300 yards, the superior velocity and resistance together cause great destructive effects, and for these so-called explosive ranges the character of the injury is quite similar to that observed in the case of the old ball. One sees in a wound like this an amount of lesion that is no longer limited by the channel track. Fragments of bone, ranging from very small sand to spiculæ half an inch or more in size, have been driven into the soft parts by the energy transmitted from the projectile. Such a wound affords ample opportunity for the development of infection because of the large extent of the traumatism. In the middle and remote ranges, however, the lesion to the diaphyses again takes the char-

acter of clean-cut perforations with possibly long subperiosteal fissures.

It is reasonable to suppose that a great deal of the absence of infection in the war wounds of to-day, including the rarity of tetanus, is due to the change in character of the wounds in war, which in turn depends on the modifications in the armament of the nations. The amount of destructive effects, as already noted, is specially shown within the zone of explosive effects—up to 300 yards, and, depending on the resistance encountered—up to 500 yards. The large majority of the battle wounds of to-day are seldom inflicted within the former of these ranges, namely, 300 yards. We might also say that the reduction of infection, including tetanus, in war wounds, is incidentally due to the alteration in battle tactics. In the days of low velocity weapons propelling large leaden bullets, the tactician was prone to marshal his forces *en masse* in all frontal attacks, the last act in the struggle being a charge with fixed bayonets. The wounds at these proximal ranges were attended with extensive lesion which favored infection to a marked degree. To-day, owing to the extended range of the new armament and the deadliness of the fire at proximal ranges, the tactician deploys his soldiers in the form of patrols composed of a few men in groups. His efforts on the terrain are directed toward flank movements. Frontal attacks end so disastrously, as a rule, that they are no longer practiced except in those cases where the advantage is manifest. As a result of this change, the large majority of battle wounds are received at middle and remote ranges, namely, from 800 to 2,000 yards, where the humane features of the small jacketed bullet are specially shown.

Our experience in Cuba sustains this view. The cases of infection were very few, and out of 1,400 wounded at El Caney and San Juan, there was not one case of tetanus noted. The range in both engagements was at all times beyond the zone of explosive effects, as noted by the reports of the participants and the absence of extensive lesions so characteristic of wounds inflicted at close quarter. On the other hand, out of 3,401 cases of gunshot injury reported from the Philippine insurrection, including the advance on Pekin, there are 8 cases of death from tetanus reported. It will be seen by the tabular statement that five of the cases occurred in men wounded by our own service rifle.

CASES OF TETANUS FROM GUNSHOT WOUNDS, 1898 TO 1901, INCLUSIVE.

Status: Regulars, 6; volunteers, 3. Total, 9.

Place: United States, 1;* Philippines, 8. Total, 9.

Missile: Krag-Jorgensen, 5; Mauser, 0; Remington, 1; pistol, cal. .30, 1; shrapnel, 1; undesignated, 1. Total, 9.

The cards show that the wounds were inflicted mostly by accident at close range. The lesion, as a rule, was more than likely lacerated by the superior energy of the missile near the muzzle and the explosion of the powder gases, thus causing a wound with special predisposition to the development of tetanus.

The rarity of tetanus in the Anglo-Boer war has been touched on by the English surgeons. Their list of casualties is much larger than that from any war since the adoption of the reduced caliber weapon, viz.:

ANGLO-BOER WAR, BRITISH ARMY.

Total killed	5,774
Wounded	22,829
Ratio of killed to wounded	1 to 3.9
Died of wounds	3.7 per cent.

* This case occurred at Fort Ringgold, Texas, the character of bullet not designated.

This war set aside forever the doctrine that frontal attacks *en masse* could ever again be practiced in battle. With rare exceptions the engagements were waged at the middle and remote ranges.

Although it is yet early to speak positively, Surgeon-Colonel W. F. Stevenson, of the English army, professor of military surgery at Netley, who was engaged in the line of communication during the entire war, informs me, under date of Oct. 1, 1902, "that not nearly all the returns had as yet been received from the Cape, but so far as returns had come to hand no case of tetanus had been recorded." He saw no cases himself, nor did he hear of any. Doubtless the full report when published will show some cases, but they will be few as compared to the number in former wars, or even to the number noted in the gunshot injuries in civil practice to-day.

Although it seems well established that the lesion conferred by the reduced caliber bullet does not predispose to infection as much as that from the old leaden bullet, still the blank ammunition used in the new armament appears to confer a lesion that gives a definite predisposition to the development of tetanus at least.

Deubler records 20 cases of tetanus occurring in recent maneuvers of the Austrian army. Of this number 17 occurred from accidental gunshot injuries by blank cartridges loaded with smokeless powder. The author points out the increase of tetanus since the introduction of the new explosive, but he attributes this to the wadding, which is larger and more carefully packed in the smokeless powder cartridge to insure a louder report when the rifle is discharged, the object being to simulate the conditions in war. Investigation showed it to be contaminated, although it is not stated that tetanus spores were present. We believe that it would be more correct, in view of recent investigations, to attribute the occurrence of the tetanus to special features in the lesion conferred by the new explosive as well as by the wad, and to take for granted that the source of infection was from dirt in the barrel, the clothing or the skin.

VIII. CONCLUSIONS.

The literature of poisoned wounds gives ample evidence that the custom of poisoning the implements of warfare, such as arrow heads, lances and swords, has been practiced from prehistoric times to the present day. From the state of our present knowledge of the potency of certain chemical and bacteriologic poisons we have reason to believe that the custom mentioned of thus adding to the deadliness of the injuries inflicted in war, in the hunt and in criminal attempts, was undoubtedly successful in a large percentage of the cases. From the description of the poisons used and the sources of the same, it is evident that not only vegetable, but also bacterial poisons were employed, as shown by the experiments of Ledantec.

The transmission of poisons into wounds by the old implements was easily accomplished. The introduction of firearms in about the fourteenth century threw much doubt on the possibility of still continuing the practice of the ancients.

Although the composition and manufacture of ammunition, with the exception of the wad, rather negative the presence of bacteria in original packages, we must admit that the explosive and the ball are contaminated, as shown by our observations, in 12 per cent. and 47 per cent., respectively; and further, that they become contaminated invariably by handling. The wad and wadding materials are always contaminated. There is noth-

ing in the act of firing, either from the heat generated by the explosive, or that due to friction, to destroy bacteria existing in the powder, in the wad, on the ball or in the barrel of a gun; and, when distinct bacteria are placed anywhere in the ammunition, including both black and smokeless powder, or in the barrel before firing, they can be invariably recovered when shot into media, as we were able to prove in our early work with anthrax, and as has been more recently demonstrated by Pustoschkin while working with the *Bacillus coli, Bacillus ruber, Bacillus subtilis* and *Streptococcus pyogenes.*

The results in the foregoing experiments warranted the belief that poisoned wounds could be inflicted by firearms when specific pathogenic bacteria were placed in the ammunition or in the barrel, and, as a matter of fact, in 1892 we demonstrated this with anthrax placed on bullets, and again, in 1895, when the organism was placed in either smokeless or black gunpowder. With the exception of infecting the powder, the experiments referred to by us have been confirmed and elaborated by Probst, Dorst, Strick and others working with various bacteria. Taking tetanus as the ideal organism with which a wound may be poisoned, we have seen in our later experiments that the organism can be transmitted into animals with fatal results when it is placed at any point from the powder to the point of impact on the skin. It follows from the work of the different observers that all forms of bacterial life can be transmitted by portable firearms, and that gunshot wounds can be infected or poisoned when virulent pathogenic organisms are designedly employed. We should bear in mind, however, that when a gunshot wound is found to be primarily infected, the infection may have come from other sources than those mentioned in the ammunition or barrel, because infected clothing or skin may be carried into the wound by a sterile missile.

Aside from the rôle that is played by the resistance of the individual and the virulence of the organism in the infection of wounds, the character of the lesion, so far as this relates to the local resistance, is of prime importance. We know now that hematomata confer a special predisposition to infection, and as the lesion of a gunshot wound often partakes of the nature of a hematoma, in addition to lacerations and other injuries leading to a condition of necrosis, we must regard the wounds from firearms, everything considered, at least as susceptible to infection as hematomata, and Strick's experimental work goes to show that they are even more so. We have shown also that necrosis caused by burning is an additional predisposing factor in wound infection, and one that we may consider with propriety in toy-pistol tetanus, as well as the tetanus from powder burn occurring with other weapons, when the shot is received at contact or thereabouts.

Concerning the possibility of transmitting vegetable poisons into wounds, if we take curare and ricin as examples of such poisons we find that there is nothing in the act of firing to destroy their lethal properties, and that they are readily conveyed into wounds when placed in the powder, on the ball or in the barrel. Toxins and animal poisons, like snake venom, can undoubtedly be conveyed in the same manner.

Finally, we have to conclude that all forms of bacterial life and animal and vegetable poisons may be conveyed into wounds made by firearms, and that the clinical evidence of poison in the case of bacteria depends on the variation of the factors already mentioned. The clinical evidence of vegetable poisons, on the other hand, is not so dependent on the amount of the lesion; in fact, our experiments show that clean incised wounds absorb the poison more readily than other wounds, and that death is more rapid.

Considered in the light of our present knowledge, the facts mentioned are so susceptible of proof that it becomes the duty of the surgeon in all criminal attempts to make a thorough examination of the ammunition and weapon. This should include a bacteriologic and chemical study of the powder, the bullet and the barrel as follows:

1. If powder grains are found in the clothing or wound they should be carefully collected for examination.

2. The projectile inflicting the wound when recovered should be at once dropped into media with sterile forceps.

3. If the wound has been the result of a ricochet shot, the point of impact before penetrating the skin should be examined for the presence of poison.

4. The inside of the barrel of the weapon should be examined for specific micro-organisms.

5. The examination should also include a thorough study of all the ammunition remaining in the weapon.

6. The same steps should be observed in examinations for the presence of toxins, animal and vegetable poisons. In this connection the following passage from the Huxley Lecture by Welch describes the method of identification: "The only certain means of detecting toxins of the class of diphtheria or tetanus toxin, snake venom and certain vegetable poisons of the same category is their neutralization by the corresponding antitoxic sera. Occasion may arise where such detection is of practical and even medicolegal importance, as has been exemplified in India, where the criminal use of cobra venom is not unknown."

When the evidence of poisoning has been shown, the prosecution should endeavor to establish the absence of the poison found: 1, on the instruments; 2, the dressings; 3, the hands of the attendants; 4, the clothing, and 5, the skin of the patient. This part of the evidence can be readily gathered if the surgeon in charge is on the alert and acts at once. In all the examinations for bacteria special attention should be paid to the identification of strict anaërobes by animal experimentation as well as by culture methods.

I desire, in conclusion, Mr. President, to express my sincere thanks to Prof. William H. Welch for many valuable suggestions while working out some of the problems in this lecture, and I also desire to mention the name of Dr. A. B. Herrick, clinical assistant and pathologist to the Barnes Hospital, for material aid in all the recent laboratory experiments which were found necessary. His judgment was at all times valuable, and his unfailing willingness made the preparation of the most important part of the work a genuine pleasure.

Hair on the Face Among Insane Women.—A Paris exchange brings statistics collected among 1,000 women in the insane asylums and the same number in the general hospitals. An excessive growth of hair on the upper lip was noted in 497 insane women out of the 1,000, while only 290 were found in the 1,000 in the general hospitals. It was noticed that the latter very frequently had a personal or family record of neuropathy or mental degeneration. Among the insane women the proportions were 64 per cent. of the cases of senile dementia; 56.6 per cent. of those with general paralysis; 42.1 per cent. of those with dementia precox; 38.8 per cent. of the idiots and imbeciles; 37 per cent. of the epileptics, and 47.8 per cent of those with various other mental affections.

TRANSPLANTATION OF OMENTUM IN THE OPERATIVE TREATMENT OF INTESTINAL DEFECTS; A CLINICAL AND EXPERIMENTAL CONTRIBUTION.*

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The omentum plays a great rôle in the reparative process following traumatic injuries of the abdominal cavity, both in the destruction of microbes and protection of the general peritoneal cavity by reason of adhesions with intestines and the parietal peritoneum. It has even spontaneously closed up small perforations of the stomach and intestines and thus saved lives without surgical intervention. That the omentum has some property in conveying immunity to the general peritoneal cavity has been shown by the interesting experiments of Roger. He demonstrated that the omentum is a lymphatic ganglion. In rabbits and guinea-pigs, he removed the entire omentum and then injected pus organisms into the abdomen. All the animals died in a few days, while those in which the omentum remained survived, although inoculated with the same microbes. Since Nicholas Senn proved by his experimental work the adaptability of omental transplantation, as well as omental grafting over the line of intestinal suture, thereby securing greater security against a subsequent perforative peritonitis, surgeons have, to a great extent, made it a routine practice to transplant omentum when available in such work.

While omental transplantation is a recognized operation as a reinforcement to intestinal suture, I was impressed with the possibility of the use of omentum for directly covering an intestinal defect. Such a pathologic condition following a duodenal ulcer, intestinal tuberculosis, gangrenous cecum, the result of an appendicitis, where enterorrhaphy could not be resorted to, by reason of the unreliability of surrounding tissues in withstanding tension. Also where suturing would cause too great narrowing of the intestinal lumen; or where the condition of the patient or extensive adhesions would not permit an enterectomy.

The omentum has been transplanted over perforations in the stomach, both in experimental work and in man.

William Bennett, in 1896, in a case of perforating ulcer of the stomach, one-half inch in its longest diameter, covered the perforation with an omental plug, as he termed it; that is, he sutured omentum into the perforation the same as a cork fits in a bottle, after all attempts at direct closure failed. The patient made a good recovery.

H. Braun, in 1897, successfully used the great omentum in closing a perforative ulcer of the stomach in a case where the use of the suture was out of the question.

A. Tietze made a number of experiments demonstrating the advantages of omentum for reinforcement of suture. He also made experiments on two dogs, proving the possibility of directly grafting omentum over a defect in the stomach. The dogs were denied food for twelve hours before operation. He made an opening in the anterior wall of the stomach the size of a five mark piece and sutured omentum in three layers over the defect. The animals were placed on a liquid diet for one week after operation. Both dogs recovered from the operation and were killed two months later. There was great shrinkage of the omentum, the stomach walls being almost in contact, being separated only about two or three millimeters. Microscopic examination showed epithelization of the omentum on its internal surface, and the formation of the glandular elements well developed.

Enderlen experimented on cats and dogs. He incised a portion of the stomach and closed the opening with omentum. The latter gradually assumed the characteristics of gastric mucous membrane. It was found that glands developed in the transplanted portion of the omentum.

Reering performed operations on five dogs, grafting a portion of the colon into a defect of the stomach. The transposed portion of the colon became digested, but three of the dogs lived, due to spontaneous transplantation of the omentum. In other experiments, where the transplanted flap had a pedicle for nutrition, all the animals recovered. The following case is a clinical demonstration of the value of omental transplantation over an intestinal defect:

Mr. F. H., age 58, married; mother living; father dead. Previous good health. His present illness began on July 4, 1902, with a sudden pain in the abdomen. Mustard plaster applied and pain disappeared in the course of three days. Recurrence of diffuse pain in abdomen August 25, which became localized in the right iliac fossa.

Patient admitted into the Passavant Hospital August 29. Temperature 100.8; pulse 102. Operation Aug. 30, 1902. Abdomen slightly tympanitic. Great rigidity of the abdominal muscles. Percussion revealed a circumscribed area of dulness in the right iliac fossa.

Incision made over the area of dulness directly through the muscular structures; the muscle splitting operation not being deemed advisable, as a suppurative appendicitis was diagnosed. On opening the peritoneal cavity there was an escape of a considerable amount of pus. The general peritoneal cavity was packed off with gauze pads and search was made for the appendix. The longitudinal white band of the colon was found and traced in a downward direction to a hard mass situated deeply in the iliac fossa. After breaking up surrounding adhesions the appendix was liberated. On examination it was found gangrenous, with a perforation near its extremity. The cecum was of a grayish-black color. The assistant, on making slight traction on the appendix during the act of ligation, tore the appendix from the cecum, thus leaving a large ragged hole. The necrotic condition of the cecum prevented all efforts in closing the perforation being successful. A portion of omentum was stitched over the opening with interrupted catgut sutures. The abscess cavity was carefully sponged out and gauze and tubular drainage inserted. The external wound was closed in the usual manner.

The following day the temperature arose to 103, pulse 140. Bowels moved with a turpentine enema. The temperature dropped in the course of a few days. Drainage removed five days after operation. There was considerable discharge of pus, which required daily irrigation. The drainage wound healed by granulation. At no time was there escape of feces or pus with a fecal odor. The patient was discharged from the hospital Oct. 17, 1902.

This case illustrates one of the many instances where a fecal fistula is so often the result of a gangrenous appendicitis. Although fistulæ are prone to heal in a short time, a great many lives are made miserable by the permanency of this complication.

Having secured such a favorable result in a case where an intestinal fistula appeared inevitable by the usual surgical treatment, I concluded to resort to animal experimentation in order to investigate the possibilities of omental transplantation. The following experiments are placed in two series:

* Read before the Chicago Surgical Society.

SERIES A.

Experiment 1.—Black terrier, ten pounds weight. Incision made in right iliac fossa. Colon found ingested with a hard substance. Opening made in the colon size of a dime. Extravasation of feces, which was carefully sponged away. Omentum placed over wound and united to intestine with one row of continuous Lembert sutures of silk. The line of suture was one-quarter of an inch from the cut mucous membrane of the intestine.

Experiment 2.—Water spaniel, seven pounds weight. Median incision. Colon filled with fecal material. Opening made in colon size of a nickel, over which the omentum was sutured with one row of continuous Lembert sutures.

Experiment 3.—Black dog, seven pounds weight. Median incision. Opening the size of a nickel made in a loop of small intestine. Extravasation of fluid feces containing bile. Omental transplantation made with a double row of continuous Lembert sutures. Dog collapsed from anesthetic and prolonged artificial respiration was twice required. Dog in bad condition when taken off the table.

The results were uniformly fatal, the dogs in Experiments 1 and 3 dying during the night following the operation, while the dog in Experiment 2 lived only until the following day. Death was due to perforative peritonitis. Thinking that the mortality was due to inefficient suturing, I concluded to do another series of experiments with the continuous Czerny-Lembert suture; also to exercise more care in the technic and prevent extravasation of intestinal contents during suturing by tying off the proximal and distal side of the wounded intestine with strips of gauze.

SERIES B.

Experiment 1.—Dog, weight ten pounds. Median incision. Segment of small intestine seized and fecal contents stripped along the lumen on the distal side. Mesentery perforated with hemostatic forceps in two places. Gauze tapes were introduced and the intestine tied. A portion of omentum was puckered with a mattress suture of catgut to make it a more compact mass. An incision was next made in the intestine the size of a nickel. The omentum was now sutured to the serous surface of the bowel on the posterior side of the perforation, with a continuous Lembert suture. A continuous Czerny suture was next inserted all around, uniting the mucous membrane of the intestine to the omentum, thereby closing the lumen. The Lembert suture was now continued on the anterior surface, completing the operation. The technic corresponds to that of a lateral anastomosis. The temporary constriction of the intestine was removed, the abdominal cavity sponged, and the external wound closed.

Experiment 2.—Dog, weight nine pounds. Median incision. Opening in the small intestine the size of a nickel. Operation same as in Experiment 1.

Experiment 3.—Small dog. Median incision. Opening in the small intestine the size of a nickel. Technic same as in the previous two experiments.

Dogs 1 and 3 died the same day. Dog 2 lived fifteen hours. Death was caused by a perforative peritonitis, as in Series A.

The experiments were done under the most favorable circumstances, as regards the surroundings for doing aseptic work. However, no pretense was made to clear out the intestinal tract by restricted feeding before operation, as was done in the series of experiments performed by Tietze.

The unfavorable results of the foregoing experiments are no criterion of the future value of omental transplantation.

The omentum in the dog is thinner than in man, and the adipose tissue is not as abundant nor as vascular; therefore, not as favorable for plastic work. The stomach is apparently the most favorable portion of the alimentary tract for omental transplantation. By reason of its fixed position, the gastric movements do not place as much tension on the transplanted omentum as is the case with the peristaltic wave of the intestines. The great omentum in this region is also found near its attachment; which may also be a favorable factor. The experimental and clinical evidence, although scanty, is abundant proof of this fact. The cecum is the most favorable portion of the intestinal tract by reason of its slight mobility. It lies in one of the regions most frequently attacked by pathologic processes, and the future will demonstrate the adaptability of omentum for defects which can not be closed by suture. Resection of the cecum or a lateral anastomosis are formidable operations as compared with omental transplantation. Primary transplantation of the omentum in gangrenous appendicitis will greatly obviate fecal fistula, which so often follows the operation.

Until more clinical evidence accumulates, showing that reliable suturing can be done, intestinal transplantation of omentum should not be resorted to unless there is abundant drainage down to the seat of suture, besides walling off the general peritoneal cavity.

I intended to perform a series of experiments making omental transplantation with abdominal gauze drainage, but found it was impossible to do such work humanely, as the dogs would gnaw away such dressings unless they were restrained in a cruel manner.

In operations on the small intestine, the latter should be anchored to the abdominal wall, thereby preventing the peristaltic wave making traction on the line of suture before adhesions have formed. The rapid, violent peritonitis, with the subsequent postmortem findings, showed that this was the cause of death in my six experiments.

The microscopic sections of specimens examined by Tietze and Reering showed that omentum transplanted over stomach wounds would act as structure, over which epidermization would take place from the contiguous mucous membrane. There was also development of glandular elements. In the course of time cicatrization of the mesoblastic omentum diminished the area of the defect to a great extent. Unfortunately, I could not secure a specimen for microscopic demonstration, but believe the same reparative process takes place in the intestine as in the stomach.

CONCLUSIONS.

1. Transplantation of omentum over defects in the stomach is an established operation.
2. Transplantation of omentum over intestinal defects is recommended, but is still in the developmental stage.
3. Transplantation of omentum over defects in the cecum is the most favorable portion of the intestinal tract.
4. Transplantation of omentum over defects in the small intestine should only be done after fixation of the segment of intestine to the abdominal wall.
5. Gauze drainage should be resorted to, excluding the general peritoneal cavity.

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A zealous sanitarian says that for every case of typhoid fever some one should be hanged.

FIBROSIS OF THE LARYNX AND TRACHEA.

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A fairly extensive search through modern literature has given the writer the impression that the sclerotic type of chronic laryngo-trachitis has received very meager attention, and that most text-book sections on the subject are decidedly hazy in tone. It may be simply said that the condition has long been known to laryngologists under various names, but has been much confused with wholly separate pathologic states, and has but rarely been definitely described. A review of the literature of the subject does not therefore seem specially desirable.

ETIOLOGY.

Laryngo-tracheal fibrosis may be regarded as the final stage of every case of progressive chronic inflammation of this region—but the element of progression is fortunately absent in the great majority of examples. We know practically nothing of the etiology of sclerosis in this, or indeed in any other region of the body. While the causes of ordinary chronic inflammation may be fairly well established, the rapid, steady and inevitable progression of fibroid changes in typical examples of sclerosis is as yet totally unexplained. Its causes originate far back in the molecular life of the individual, and are at present absolutely unknown.

PATHOLOGY.

The pathology of the disease is that of fibroid degeneration of tissues in general; the slow migration of leucocytes, their aggregation and subsequent fibrillization into new connective tissue, the atrophic changes due to pressure which necessarily follow. The movable structures of the larynx are thus rendered more or less stiff, the muscles incapable of performing their work and the characteristic voice is the result. The epithelium lining the larynx becomes squamous and stratified not only on the vocal cords where it normally exists, but on the surfaces which in health are covered with cylindrical cells. This is the dermoid metamorphosis of Foerster, and is characteristic of long-continued inflammation of mucous membranes generally. The close adherence of mucus to the surfaces during life, and the extreme difficulty experienced by the patient in clearing the throat, are, of course, fully explained by these changes. Proliferation of the epithelia may be so pronounced that marked papilla are formed, and these inflammatory papillomata, which usually appear late in the history of chronic laryngitis, are the small laryngeal warts which come on in middle life. This is also the pathogenesis of the pachydermia laryngis, of which so much has been written; the proliferated squamous epithelium being piled up in plates and nodes on the fibrosed submucous tissue.

SYMPTOMS.

The clinical history of the disease is that of long-continued pharyngo-tracheal annoyance, consisting in the early stages of the usual symptoms of ordinary acute, subacute and chronic inflammation in the upper respiratory tract. As fibrosis becomes well established a different train of symptoms begin. Most characteristic is vocal weakness, pure and simple, not due to the presence of mucus or to local swelling, or erosion of cords, but to pure inability to use the larynx in a normal manner for longer than a few minutes at a time. The voice is thin and weak, but not at first hoarse; speaking is soon troublesome or painful, annoying cough appears, and rest is demanded. This laryngeal incapacity is undoubtedly due to the general stiffening of the whole larynx, and direct interference with muscular action by the pressure of new-formed fibrous tissue. Slight cough with purely mucous, rarely purulent expectoration, is a constant symptom in laryngo-tracheal sclerosis; it is most marked on waking in the morning, and in early cases may not again appear during the day. Vague but often very annoying, painful sensations about the larynx and trachea are quite constant. They range from mere paresthesia, described as dryness, stiffness, tickling, etc., to a constant sense of weight and pain. Extreme vulnerability to acute inflammatory attacks is one of the commonest signs of sclerotis laryngitis, and is the usual cause of the patient seeking relief. It seems to be present in all cases, and is so marked at times as to practically invalid the subject. Chronic bronchitis is present in about 20 per cent. of the cases and where it exists cough and expectoration are usually distressing features. Spasmodic asthma is found to some extent in about 10 per cent. of all cases, and fibrosis is more rapid in these than in other subjects. Sclerotic changes may begin in the larynx at any age, but are rare in the young; patients applying for relief are usually in middle life.

DIAGNOSIS.

Direct examination by inspection under modern conditions is the most instructive in this as in other laryngeal diseases. The nasal cavities and pharynx will show more or less fibrosis, generally very marked about the lateral pharyngeal walls. In the laryngoscopic mirror the picture is characteristic, the whole region appears much larger than usual, the larynx capacious and especially easy of examination; the region of the arytenoids and folds are narrowed and thinner than normal, and prominent varicose vessels are often present. The condition of the mucous membrane varies if epithelial changes have been marked, crusting and erosion of the membrane are prominent, but this is less common than the purely interstitial form and the epithelial surface may be but little changed. Any amount of papillation, bosselation or epithelial aggregation may exist, giving the appearances described as pachydermia, the region between the arytenoids is especially apt to show minute papillomata. Very rarely the epithelia may break down over a limited area, giving very shallow erosions or ulcers, but these are by no means characteristic. The trachea is usually very easy of examination by the mirror, and shows widening, yellowish coloration, and often striation, from the characteristic changes. No other throat conditions present appearances in the least similar. The active inflammation and hyperemia of ordinary chronic laryngitis are absent, and the "graying," swollen arytenoids and ulceration of tubercular laryngeal disease are conspicuously absent. The deep red color islets of intense congestion of chronic lithemic laryngitis are not present after fibrosis has well advanced. Auscultation of the trachea and bronchi may show harsh breathing and coarse râles, and cog-wheel respiration is very common.

TREATMENT.

As to the treatment of fibrosis of the larynx and trachea, if any curative measures have been employed the inventors have kept the information to themselves, and the prognosis is always unfavorable as to cure in the present state of our knowledge. Palliation of the symptoms, possibly arrest of the pathologic process, is all that can possibly be secured. New tissue elements

can not, of course, be formed, and therefore restoration of function is not possible. As in sclerosis elsewhere the problem is to prevent further migration of leucocytes and to secure the maximum of efficiency from the remaining normal tissue.

Local applications in the form of sprays or vapors are certainly of benefit; medicines which act as mucous membrane stimulants, but not as irritants, are most efficient. Chloretone, many of the volatile oils, carbolic acid and iodin are most useful; mild alkalies, such as sodium benzoate and borate, are efficient in weak solution for dislodging adherent mucus. All mineral astringents, especially silver nitrate, so long lauded in the treatment of chronic laryngitis, are out of place in this disease, and their use in any condition is exceedingly limited in the practice of the writer. The rather old-fashioned and now much-neglected steam atomizer is especially efficient, and is generally the only apparatus safe to trust to the hands of patients. Internal medication as far as the laryngo-tracheal disease is concerned is idle toil, not the slightest good ever having resulted from such treatment, used alone, under the writer's observation.

Massage, our most valuable agent when dealing with sclerosis higher up in the air passages, can scarcely be used even in the upper regions of the larynx, but may be cautiously attempted in very tolerant subjects. Faradism is of distinct value, the positive pole against the pharyngeal mucous membrane, and the negative over the sternum or held in the patient's hand, is the usual method of employment. A combination of external massage with faradization is very beneficial, one pole being held by the patient, the other by the surgeon, while with his other hand the latter carefully palpates the whole exterior of the larynx. Exercise of the upper respiratory organs by breathing and vocal exercises often does great good, and the improvement of the whole bodily muscular tone by properly directed general exercise is here, as in other forms of fibrosis, often singularly beneficial. Climatic change is always, if well directed, of use, sometimes arresting the sclerosis for a long period. A high altitude commonly answers best, and these cases are nearly always worse at the seashore.

The writer would urge greater frankness to ourselves as well as to our patients in dealing with these and other incurable cases, but believes that very great comfort, lasting for many years, can be secured in even some of the worst examples of chronic fibrosis of the air passages.

THE PATHOLOGY THAT REMAINS AFTER THE NON-SURGICAL TREATMENT OF PERITONITIS.*

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Faithful followers of the teachings of rational medicine believe that actual disease within the abdomen, as in other parts of the body, always means a pathology, the removal or correction of which is essential to the restoration of normal health; and that the efficiency of any treatment for disease in this region, as elsewhere, should be estimated chiefly by the effect it has in removing or modifying the pathology which produces the symptoms. In the management of peritonitis, where the morbid processes are concealed beneath a rigid or distended abdomen, there are many temptations to lure us from these teachings; and doubtless at times we all find ourselves reading, discussing, or perhaps practicing treatments which, in the light of the revelations of the modern operating-room, we must know are contrary to sound surgical principles and common sense.

I believe that we are especially prone to fall into these errors in our consideration of the remote dangers and distresses of peritonitis. Absorbed in our efforts to avert the immediate danger from sepsis, we are inclined to forget that the sufferings and deaths from recurrent attacks and adhesions are, in the aggregate, vastly greater than those occurring in primary attacks of acute peritonitis; and that the pathology remaining after the non-surgical treatment of peritonitis is not a myth, but a distinct, definite reality, which is directly responsible for this mortality and misery.

Bedside, laboratory and dead-house studies of this pathology and its causative relation to abdominal symptoms are instructive and interesting; but I believe that our most impressive and convincing lessons are to be learned in the operating-room, and that our perfected treatment of the future will be evolved from the gradually accumulated findings and conclusions of those who have frequent opportunities for observing these morbid processes in life.

The conclusions, briefly stated below and offered for your consideration, have been suggested or confirmed by my own operating-room observations. For the sake of brevity and clearness, these conclusions are compressed into the fewest possible words, free from statistics, case-notes, or quotations from authorities.

Ninety-five per cent. of all the survivors of the non-surgical treatment of peritonitis are left with infection without the peritoneal cavity and adhesions within the peritoneal cavity. Well-known anatomic peculiarities of the gall bladder, appendix, and fallopian tubes favor the reception and imprisonment of infection from the alimentary canal and endometrium and its extension to the peritoneum. Consequently, it is about one of these organs that we usually find the pathology, unless it has been mechanically removed. The greatest amount of infection comes from a sudden rupture of an appendiceal or tubal abscess, or a perforation of the stomach, an intestine, or the gall bladder. The most virulent infection is either appendiceal or from a pyosalpinx, following a puerperal endometritis; the mildest is from a cholangitis, or a gonorrheal salpingitis.

Since the infection of an appendicitis or a pyosalpinx has no outlet through natural channels, and in inflammation of the bile ducts and gall bladder there is usually some drainage through the common duct, we usually find in the first mentioned diseases the local and general symptoms are pronounced and unmistakable, while in the latter (in the absence of gallstone seizures) the symptoms may be very obscure and misleading. When the infection reaches the outer coat of one of these organs, peritoneal adhesions are formed as a part of Nature's defense against the invasion of a microbic foe.

My own experience would lead me to believe that about 40 per cent. of the possessors of this pathology (infection and adhesions) suffer from recurrent attacks of acute and subacute peritonitis, and less than 1 per cent. from mechanical obstruction of the bowels.

It is to the remaining 59 per cent. that I invite your particular attention at this time; for, while it has been customary to point to these cases as sufficient proof of the efficiency of the drug treatment of peritonitis, I believe that all fair-minded, thoughtful observers are learn-

* Read at the twelfth annual meeting of the Western Surgical and Gynecological Association, held at St. Joseph, Mo., December 29 and 30, 1902.

ing to regard the pathology these patients carry within their abdomens as responsible for much distress and many deaths that we all formerly attributed to other causes, or were unable to trace to any well-defined cause.

It is difficult to conceive how this or any other pathology within the abdomen and outside of the alimentary canal can be removed or permanently modified by the application of drugs to the inner coat of the stomach or intestines or to the skin covering the abdomen; and, to my mind, it seems unreasonable to assume that the gall bladder, appendix, or the fallopian tube can continue to harbor infection and the patient be exempt from those general and local symptoms that accompany imprisoned infection in other parts of the body. Among the results that are commonly overlooked or misinterpreted are subacute local inflammations, mild systemic infection, chronic rheumatism affecting the joints, tendon sheaths, and, occasionally, the pleura, endocardium, and pericardium, and metastatic abscesses.

If we should make it a rule in examining every patient who has had peritonitis and apparently recovered without the mechanical removal of the primary cause, to draw a line from the end of the tenth rib on the right side to the umbilicus, and another line from the anterior superior spine of the ilium to the umbilicus, and a third (if the patient is a female) from the middle of the second line to the spine of the pubes (each side), and then apply deep and direct pressure over the center of each of these lines, the existence and situation of a pathology would be, in nearly every instance, demonstrated. Such information would furnish us with an explanation of the symptoms of mild systemic infection, from which such patients often suffer.[1]

Just how much and how little general absorption may take place from a low-grade infection of the appendix, gall bladder or fallopian tube is impossible to determine, but that some lives are shortened in this way and many made miserable, is undoubtedly true. When we meet with patients suffering from symptoms that may be due to a mild toxemia of obscure origin, such as febrile and circulatory disturbances, gastro-intestinal disorders, headaches, fugitive pains, malaise, and others equally significant, we should always include in our examination those organs which are most likely to harbor the source of such a systemic infection.

For example, we know that rheumatism is often associated with appendicitis and peritonitis as well as with posterior urethritis; and, of late, we frequently hear of a rheumatic peritonitis or a rheumatic appendicitis, but never of a rheumatic gonorrhea. The fact is that rheumatism is not an uncommon consequence of septic absorption, and must be counted as one of the not infrequent remote results of the non-surgical treatment of peritonitis. It is surely inconsistent to conclude that infection in one part of the genito-urinary tract is a cause of rheumatism, and that in another or even in the gall bladder or appendix, it is the result of uricacidemia.

To perform their physiologic functions perfectly, the stomach and intestines require the greatest mobility their anatomic attachments permit, and any band of adhesion that fixes, binds, or drags on them or that impedes or prevents their free movements always means a departure from health, and is usually attended by more or less distress and danger.

Post-operative adhesions, however firm and strong, are usually absorbed if the primary infection is completely removed; but no dietetic measures, drug treatment or rest cure will prevent the formation of adhesions or materially influence the absorption of those already formed, so long as the original infection is retained. In other words, the presence or absence of infection determines whether existing adhesions shall be absorbed or strengthened and multiplied. In operative work, the presence of adhesions about the gall bladder, appendix or fallopian tube is more reliable and tangible evidence of existing infection than any available microscopic or bacteriologic proof.

Guided alone by our observations during operations, I think that we may assume that either in the right upper quadrant or in one of the two lower quadrants of the abdomen, adhesions remain and produce symptoms more or less grave, in nine-tenths of all the cases after the non-surgical treatment of peritonitis. This pathology produces symptoms so variable in intensity and so misleading in character that unless one is impressed with its frequent occurrence and bears well in mind the anatomic relations and physiologic functions of the near-by organs, he is almost certain to attribute the symptoms to other and wrong causes.

Gastric symptoms are rarely absent, since the omentum is almost invariably involved in a way to drag on the stomach. Constriction about the pylorus with dilation of the stomach is not an infrequent result of gall-bladder adhesions with a long list of gastric and reflex symptoms. In the majority of these cases, the true condition is not suspected, or, at least, demonstrated, since, unless life is in jeopardy, one does not often feel justified in opening the abdomen except the diagnosis be quite clear. Within the past few years, however, in a number of cases where the symptoms have been especially striking, the true diagnosis has been made, and the patient relieved by surgical measures. I have recently operated four times with satisfactory results, where the symptoms, produced by adhesions, pointed strongly to cancer or ulcer of the stomach.

Partial occlusion of the colon with or without a connecting sinus may occur when the gall bladder becomes attached to the hepatic curvature of the colon.[2] Bands from diseased uterine appendages may encircle or angulate the ileum, when perhaps no history of recent pelvic disease exists to guide one. Involvement of the cecum and ileum are common after appendicitis and right pyosalpinx; while the sigmoid is nearly always implicated when the primary peritonitis has arisen from a left pyosalpinx.

It can not have escaped the observation of operators that ulcers of the stomach and intestines occur almost invariably in those parts that are most dependent or in those that are dragged on by adhesions. Doubtless long-continued functional inactivity detracts from the vitality of the part and favors degenerative changes. It is equally true that the preferred site of malignant disease is about the former situation of an inflammatory process. Just as the cracked lip, the fissured nipple and the lacerated cervix seem essential to the development of cancer in those parts, so the selected regions for inflammation in the abdominal cavity seem to mark the favored sites of malignant disease, as the pylorus, duodenum, rectum, sigmoid, cecum, hepatic curvature, etc. If these facts be as true as operative experience would seem to indicate, we must count the pathology that remains after the non-surgical treatment of peritonitis as a

1. I reported one such case in the March Annals of Surgery, where the infection came from a gall bladder filled with gallstones so situated as not to produce any characteristic paroxysms of pain.

2. One case of my own of this kind was reported in the March Annals of Surgery.

strong predisposing cause of ulcer and cancer, and in estimating the advantages and disadvantages of either method of treatment, due weight should be given these facts.

As in my recent work, I have compared the opinions formed at the bedside with the actual conditions disclosed on the operating table. It has seemed to me that we are only just beginning to comprehend the remote results that may follow the non-surgical treatment of peritonitis and that no itemized list of symptoms produced by this infection and these adhesions will serve to give us an adequate idea of this pathology and its ill consequences; but that our clearest conception must come from a realizing sense of its relative frequency, as compared with other morbid conditions within the abdomen, the history of one or more attacks of peritonitis, the results of palpation, and the exclusion of other causative factors, combined with our familiarity with the anatomy and physiology of the parts involved.

Beyond the reach of drugs, electricity, massage, or dietetic measures, more common than cancer and ulcer combined, often mistaken for either, a predisposing cause of both, capable of producing any abdominal symptom or set of symptoms in the category from those of the mildest functional disturbance to those of well-advanced malignant disease, surely we have here a pathology that needs to be taken into the strictest account not only by surgeons who undertake the rational treatment of acute peritonitis, and are often called on to decide for or against operative interference, but by all of us when we are striving to search out the primary causative factors and associated symptoms of any obscure chronic disease or distress within the abdomen.

THE USE OF A MYDRIATIC AFTER THE AGE OF FORTY-FIVE.*

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In discussing this topic it will be well to keep in mind the distinction between mydriatics and cycloplegics, remembering that the former, in so far as they are mydriatics only, dilate the pupil without affecting the ciliary muscle, and that the effect desired in the latter is to suspend the action of the ciliary muscle and so paralyze the accommodation. While there is no known cycloplegic which does not at the same time dilate the pupil, there are mydriatics which have but little effect on the accommodation.

It is probable that our committee, in arranging the subjects for special discussion at this time, had more particular reference to the use of a cycloplegic in refraction work after the age of 45, but the writer has had no intimation that this is the case, and the topic will receive a somewhat broader treatment. While the main discussion will center about such use of cycloplegics, the use of both mydriatics and cycloplegics for various purposes after middle life will be briefly considered.

THE USE OF A MYDRIATIC.

a For ophthalmoscopy and *b* for retinoscopy.

a Concerning the use of a mydriatic for making more thorough examination of the peripheral portions of the lens, the other media and the fundus there is perhaps no difference of opinion. We all probably use a mydriatic for this purpose at any age without the slightest hesitation, unless we find symptoms of glaucoma present. In the latter case even we may consider the additional information gained of sufficient importance to warrant the use of a mydriatic for a sufficient time to make an examination and then follow it with a myotic, which shall counteract any unpleasant effect that might follow dilatation of the pupil.

b The same rule of action probably governs the use of mydriatics in making the shadow test to determine the refraction. This is, in the writer's judgment, by far the most valuable objective test for refraction at our command, and yet in many cases, particularly in old people in whom the pupil is apt to be small, its accurate application without artificial mydriasis is impossible. In such cases, with the precautions mentioned above, a mydriatic is indicated.

NECESSITY OF A CYCLOPLEGIC IN CERTAIN CASES BEYOND THE AGE OF 45 FOR ACCURATE REFRACTION.

On this point one would expect to find differences of opinion, as there are differences of opinion concerning the necessity of using a cycloplegic for refraction work at any age. To test their theory and practice in this regard the writer sent one hundred letters of inquiry to prominent ophthalmologists throughout the country. The number and promptness of the replies and the interest shown in the subject are most gratifying.* To those who so kindly contributed to this paper the writer wishes at this time to express his sincere thanks.

The writer has for many years believed that better and more accurate refraction work can be done for most patients under 30 by putting the accommodation entirely at rest at some time during the examination, and it is his practice to urge this procedure in all but the most simple cases. Beyond the age of 30, the proportion for whom a cycloplegic is required rapidly diminishes, and by the time 45 is reached such cases are exceptional, and yet in the exceptional cases the indication is as positive for cycloplegia as in those of any age. Since the suspension of accommodation in the aged is due to hardening of the lens and not to paralysis of the ciliary muscle, it is difficult to fix a time beyond which a cycloplegic could never be of advantage. We occasionally find the ciliary muscles of eyes that have lost practically all accommodation still tugging away in an effort to correct an annoying astigmatism, and the suspension of the function of these muscles will sometimes disclose conditions not otherwise discoverable.

The writer did not suppose that a cycloplegic is used in more than 1 or 2 per cent. of his refraction cases after the age of 45, but on running back over his records he finds that of 194 such cases seen in private practice in the past two years a mydriatic was used in 38 cases and a cycloplegic in 14. Of the latter scopolamin was the cycloplegic employed in 9 cases, none over 50 years old, while homatropin and cocain were used in 5 cases, one of which was 55. Homatropin and cocain were used in one patient aged 50, and as the accommodation was not entirely suspended scopolamin was employed later. That there are such cases that can not be as well corrected with all available tests without cycloplegia he is fully assured. It is possible that if patients could be seen and studied repeatedly that proper correction might

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

* Since we all like to have others think as we do, it is an additional source of gratification to know that the practice of so large a proportion of those replying coincides as closely as it does with that of the writer. The abstract of this paper [in the program of the Saratoga meeting] was sent to the Editor of THE JOURNAL before those answers were received, but a very large proportion of them show a practice almost identical with that outlined in that abstract.

in all cases be ultimately given. But a large proportion of the writer's patients come from a distance, observation is only possible for a day or two, and the patient can not return in a few weeks for change if the first lenses are not satisfactory. Hence it is necessary that he should learn all that he can about the eyes at once, and this can not be done in these exceptional cases without cycloplegia.

INDICATIONS FOR CYCLOPLEGIA.

The indications for cycloplegia in these older patients are asthenopia, inability to secure as good vision as the condition of the eye would seem to warrant, lack of agreement between the results obtained by the test lenses, the ophthalmometer and the shadow test and general uncertainty of tests for astigmatism and hyperopia. It has seemed as if cycloplegia were more apt to be required in anisometropia than in other cases, and also in very nervous patients.

THE USE OF A CYCLOPLEGIC IN PATHOLOGIC CONDITIONS.

There are other cases where doubt as to the desirability of using a cycloplegic is put at rest by the condition of the fundus, when, as has been so well shown by Dr. Risley, the eyes are irritable, the choroid and retina showing slight changes and the edges of the discs blurred, the accommodation should be put completely at rest, not only for a most careful study of the refraction, but also for the good effect that this rest will have on the general condition and nutrition of the eye. In some of these cases seen long ago, where cycloplegia had been used as a therapeutic rather than as a diagnostic measure, such a difference was found between the apparent and the real refraction as to demonstrate conclusively to the writer that the suspension of accommodation is sometimes necessary for accurate refraction work after the age of 45.

Of the necessity for a cycloplegic in cases of iritis and similar inflammatory diseases even after 45, there is no question, and yet many of these cases are among the most perplexing that come before us. Given the symptoms of a moderate iritis in an elderly person, the eye having shallow anterior chamber and rather high tension, one is under the greatest anxiety as to what it is best to do at first. The writer's practice in such cases is to instill a weak mydriatic and if the pupil responds readily and is round he concludes that iritis is probably not present, and so at once uses eserin. If this is followed by relief of the symptoms present the myotic is continued; otherwise homatropin or scopolamin may be used and the effect closely watched.

A word as to the drug habitually used by the writer and his associates in inflammatory conditions requiring a cycloplegic in elderly people. Some six or eight years ago we commenced to employ scopolamin solution in some of these cases because of its supposed freedom from danger. While it is uncertain that there is less danger of increasing tension with scopolamin than with other active cycloplegics, it has been found to produce less irritation and so is used in preference to atropin in most cases in elderly people, and in many cases of traumatism, of ulceration of the cornea and of kerato-iritis even in the young.

THE DANGER OF INCREASING THE TENSION OF THE EYE BY THE USE OF CYCLOPLEGICS.

That the use of a cycloplegic in a perfectly healthy eye has ever induced glaucoma has long been considered very unlikely by the writer. But that such use will induce in a mild, chronic glaucoma a severely acute attack, or that even a weak mydriatic will increase tension in an eye tending to glaucoma he has not the slightest doubt. The writer has not been so unfortunate as to have had a case of acute glaucoma follow the use of a mydriatic or cycloplegic at his hands, and the only case of increased tension recalled is one that he has had under observation for the past sixteen months, a case of chronic glaucoma where the tension was marked + ? at the first examination, where the anterior chamber was rather shallow and where the pupil was so small that no adequate study of the interior of the eye could be made. In this case it was deemed advisable to instill a weak mydriatic that the internal conditions might be studied. Such instillation, while not causing unusual dilatation of the pupil, was followed at once by decided increase in tension, which increase was very hard to reduce by eserin and pilocarpin. There had been no pain in the eye before, nor has there been any since. The tension has tended toward +1 most of the time since, though fairly controlled by eserin, and the sight has gradually failed. Operative interference has been steadily refused. The writer has always exercised and taught others to exercise the greatest care in regard to the tension of the eye even in the young when cycloplegia is necessary either for diagnosis or treatment.

CURRENT LITERATURE.

Reference to current text-books shows remarkably little written about the advantages of the use of mydriatics or cycloplegics in those over 45 years old, and relatively little on the dangers of such use. Below is given either in full or in abstract all the references found in a somewhat careful search.

1. FUCHS, in his text-book, page 372, says mydriatics can excite an inflammatory attack in eyes already predisposed to it, and that not only the powerful mydriatics, like atropin, but also homatropin, and even cocain. On page 387, he says mydriatics are as prejudicial in glaucoma as the myotics are useful. On page 281, he also refers to the intolerance to atropin observed in many persons. It may manifest itself by 1, the development of toxic symptoms, such as dryness in throat, nausea, etc.; 2, by the production of so-called atropin catarrh; 3, by marked swelling and redness of eyelids, resembling erysipelas, even from minute doses in some cases.

2. CLARKE says positively mydriatics should not be used in acute glaucoma. He refers especially to the frequent confusion of glaucoma and iritis, remarking that many a glaucoma which might have been cured in its early stages had it been recognized, is treated with atropin and the eye irretrievably lost. He gives a table of the differential signs between glaucoma and iritis. In glaucoma with secondary iritis we do not see the acute form, he says, and atropin will probably do little, if any, harm, as the pupil will probably not dilate because of adhesions. In such cases use homatropin carefully. If it is necessary to dilate the pupil in elderly persons in order to make a more thorough examination of the lens, etc., it is wisest not to use atropin. Homatropin will answer the purpose just as well and is much safer.

3. SWANZY: The only reference to action of mydriatics in old persons in Swanzy's recent text-book is on page 340, where he says that atropin and all mydriatics bring on glaucoma when there is already a tendency to it.

4. CHAS. H. MAY, speaking of mydriatics and cycloplegics, says (page 328), that a cycloplegic is indicated in the estimation of the refraction in all cases of children and young adults, in many cases between the ages of 35 and 45, and occasionally between 45 and 50, when the previous determination of the refraction without paralysis of accommodation has been unsatisfactory. Before using these agents in elderly persons any suspicion of glaucoma must be excluded.

5. NETTLESHIP says (page 299), atropin has sometimes caused an attack of glaucoma, because, by lessening the width it increases the thickness of the iris and so crowds it into the angle of the anterior chamber.

6. CHALMERS WATSON says (page 104), mydriatics are contraindicated where there is the least tendency to increased tension. This must be particularly attended to, especially in elderly subjects. In a second place (page 897) he states that they are contraindicated in inflammation accompanied by glutinous secretion. In such cases atropin does not act well.

7. SNELLEN (in Norris & Oliver's System, Vol. II, page 36), says of atropin, that, in normal eyes, it hardly if ever affects intraocular tension. In glaucomatous ones it may produce an attack of glaucoma. Great care, therefore, should be taken not to employ atropin too freely in eyes that are predisposed to glaucoma, as in old people with shallow anterior chambers.

8. GEO. M. GOULD, in an article on "The Ophthalmoscope and the Art of Ophthalmoscopy," in Norris & Oliver's System, page 79, says that after the eyes have been examined by other simple methods we have to decide whether or not we shall use a mydriatic before proceeding with the examination by aid of instruments. This decision will be governed by many considerations. In patients over 50 years of age we really do not need to use a mydriatic in order to diagnosticate the existing errors of refraction, and in such cases, therefore, we shall rarely need to widen the pupil for purposes of ophthalmoscopy.

9. PRIESTLY SMITH, in his article on glaucoma in the same system (Vol. III, page 672), remarks that atropin is harmful precisely in those conditions in which eserin is useful; it induces high tension by dilating the pupil, slackening and throwing the iris into folds and thereby helping to obstruct the filtration angle. The choice between a myotic and a mydriatic is not always easy to be made; one or the other must be employed tentatively, re-examining the eye at intervals.

10. E. JACKSON (article on "Methods of Determining the Refraction of the Eye) says, page 210, that as cocain possesses litt'e or no power to paralyze the ciliary muscle, it may be useful to dilate the pupil in persons over 50 years of age, whose pupils are small and whose power of accommodation is not sufficient to interfere with tests for refraction.

11. TERRIER: There are cases to be met with in practice where it is clear that atropin is absolutely contraindicated on account of the fact that this mydriatic tends to raise ocular tension. Notwithstanding the experiments of Pflüger, Wagner, Adamück and Grünhagen have shown that on animals or the normal eye this does not hold, nevertheless clinical experience teaches that unfortunate results follow the use in inflamed and glaucomatous eyes. Wherefore, we have to be extremely cautious in its use always for fear of stumbling on such a case. Atropin is to be interdicted in glaucoma of all forms. If in doubt, it is better not to use atropin, or at most to use cocain, which, while dilating the pupil will not have regrettable result of increasing tension and inducing a subacute attack of glaucoma.

In old persons, also, in whom the sclerotic has become very rigid, the use of mydriatics will have the same tendency to provoke glaucomatous complications; we should, in such cases, abstain from use of atropin, especially when we have to do with a hypermetropic eye—this being the kind particularly exposed to this danger.

As to the employment of atropin for ophthalmoscopic examination, our author remarks that in certain persons, especially in aged subjects, it is very difficult, sometimes, on account of the small punctiform pupil, to see all the details of the fundus without their use. The use of atropin in such cases is common, but it is a bad practice. In all such cases if a mydriatic must be used it should be cocain.

12. PELTIER lays stress on the dangerous effects of atropin in producing glaucoma. It causes the condition, he thinks, by its influence on nutrition or on the blood supply of the eye, producing a venous stasis and augmentation of intraocular tension, and not by constituting a simple obstacle to the filtration of liquid, as some hold.

13. KALB says the physician must never forget that in prescribing atropin he is making use of a drug not without its dangers. In old persons great care must be taken not to confuse iritis and glaucoma, and it must be remembered that glaucomatous symptoms sometimes supervene in the course of an ordinary iritis.

14. SATTERLEE reports a case (age not stated) in which glaucoma of both eyes was produced evidently from misuse of atropia instillation, and remarks that indiscriminate use of atropia is dangerous, for it must be remembered that glaucoma may occur at almost any age after puberty and following injury even younger. He had once a case of glaucoma in a boy of 9.

15. GRIMSDALE reports two cases of glaucoma following instillation of atropin which he thinks are interesting for the reason that the increase of tension did not come on while the atropin was being instilled, but at a period of considerable number of days after the drug had been discontinued, when in fact the physiologic effects must have been passing off. Grimsdale could find no other such reports in history, but thinks they are common, as his two cases occurred within nine months. This may explain his cases: Excretory channels were contracted under atropin; on stopping its use the ciliary glands resumed their normal output and the efferent channels were no longer sufficient.

16. H. KNAPP reports a case in which two drops of 7.5 per cent. solution of hydrochlorate of euphthalmin brought on a more immediate and pronounced attack of glaucoma than the author had ever seen follow the instillation of any other mydriatic. The patient was a man aged 62, left eye blind from absolute glaucoma; right V.=20/40 with +1C ax. horizon 20/20; pupil, field of vision and tension normal, noticed diminution of sight recently in R., and pain in L. eye; lately had seen blue rings around lights; found anterior chamber of right eye shallow. Used 2 minims of solution mentioned in each eye. During next 15 minutes tension increased in both eyes; in right it was +2 fully, cornea steamy, eye painful, pupil dilated ad maximum, optic disc distinctly but not completely cupped, and marked halos were seen around light. The glaucomatous symptoms in right eye disappeared in about 30 minutes under the use of 2 per cent. solution of pilocarpin, followed by 1 per cent. solution of eserin; the left blind eye was also relieved. A few days later he performed glaucoma iridectomy on right eye. Knapp found euphthalmin up to this time generally free from hypertonic action and used it indiscriminately on glaucomatous eyes.

17. J. M. HULL reported the case of a man (age not stated) who had been injured about the eye by a blow. Physician who had been consulted ordered a solution of atropin grs. ii to ℥i, two or three drops in eye three times a day. Maximum dilatation was produced within 30 minutes after first instillation. The drops were kept up for six weeks. At the end of that time examination showed right (injured) eye had fixed pupil, glazed appearance, cloudy aqueous, sensibility of cornea diminished and globe distended and hard, vision diminished to light perception, ophthalmoscope revealed a cupped and white nerve. Vision of other eye good.

18. E. J. BROWN reported the case of a man aged 61, with asthenopia and nervous symptoms, who had had trouble with eyes since childhood.

V.O.D. 20/200 with —2⌒50 cyl. ax. hor. =20/20.

V.O.S. 20/50 with —2 cyl. ax. 60 degrees nasal =20/30.

Right hyperphoria 1 degree, esophoria 5 degrees at 13". exophoria 6 degrees.

Prescribed one drop of solution of atropin, 4 grs. to ounce, morning and evening. When seen three days later no change except a change in axis of right cylinder from horizontal to 60 temporal. After four days he was seen again and complained of colored halos around light; prescribed 2/5 per cent. solution of eserin. Both fields slightly contracted, especially upper and lower quadrants; L. more than R. Seen again four days later, pupils still moderately dilated, L. cornea less sensitive than right. Arterial pulsation (not venous) on pressure and slight increase of tension in left. Symptoms subsided under use of eserin.

19. COGGIN: Patient, woman aged 68, complained of failing sight for one year. No pain. Pupils and fundus normal. Field of vision good. Instillation of drop of atropin solution (gr. ½ to ounce), with improvement in right eye, and patient was advised to use same solution whenever she liked. Four

days later patient had all symptoms of glaucoma in right eye. Iridectomy was declined, 2 per cent. solution of eserin was used and within half hour pupil was well contracted. Four days later eye was quiet, still red. T. + 1. V. fingers at 0.75. Pupil irregularly contracted with +1.50=Sn. VI at 4. with O.S. and again since consultation.

20. W. J. CANT: Patient a nervous woman aged 65, who had severe pain in head and right eye, preventing sleep. On examination eye was found to be quite blind and tension greatly increased. T. +3; two iridectomies had already been performed without relief; then excision performed by author. Occasionally slight pain in left eye, with rainbow rings round a light; relieved by solution of eserin.

A few weeks later he found lens opaque, but no glaucomatous symptoms. Iridectomy; corneo-sclerotic. Section was made in upper segment and large piece of iris removed; eye few days after free from irritation.

Eleven days after operation patient, by mistake, used atropin drops, which happened to be in the house, with result of bringing on acute glaucoma. Seen next day, tension increased, sclerotic injected, violent pain in eye and head with constant feeling of sickness. Eserin again was ordered and in a few days all glaucomatous symptoms disappeared.

21. HINSHELWOOD: If we may believe Hinshelwood, who substantiates his opinion by the recital of an interesting case, it is not atropin only that can precipitate an attack of glaucoma. Most of the authors have spoken of cocain as a safe mydriatic as regards this affection. It was advocated by Groenouw of Breslau, at a meeting of the Ophthalmological Society at Heidelberg in 1897—not as a substitute for iridectomy, but as a useful symptomatic remedy, which combined the mydriatic action of atropin with the tension-reducing action of eserin. In the discussion which followed this paper his views received a certain amount of support.

The patient was a woman aged 50, with six diopters of hypermetropia, very contracted pupils, headaches, neurotic, used 2 per cent. solution of cocain. The same evening she began to have intense pain in right eye, vomiting, and next day right eye was found to have all symptoms of glaucoma. Author thinks no doubt dilatation of pupil was immediate cause of glaucoma in the eye already predisposed to it.

Holocain is advocated by him as the drug to use in glaucoma; it is an anesthetic which neither elevates tension of globe nor dilates pupil, and is, therefore, especially fitted for treatment of such cases, having all the pain-relieving qualities of cocain without its dangerous effects.

22. DYER, in "On the Use of Atropia in Diseases of the Eye" (1882), says: "Atropia is not a panacea and can not be used freely in all inflammations of the eye. It is often a decided irritant to the inflamed conjunctiva and should never be used without positive indications."

23. ROBERTSON, in "Sulphate of Atropia and Its Uses in Eye Diseases by the General Practitioner" (1893), quotes Fuchs as saying: "Too much caution can not be inculcated in regard to the senseless employment of atropin, which, unfortunately, is still carried on by many general practitioners, who instill atropin in every kind of eye disease. In many cases, i. e., conjunctival catarrh, atropin is not only superfluous, but also causes the patient annoyance through disturbance of vision, connected with its use; and in eyes which have a tendency to glaucoma, atropin may actually inflict a great injury by determining an attack of acute glaucoma. Accordingly, atropin should be employed on quite specific indications, should be applied no oftener than is requisite to obtain just the results desired. Even in iritis, atropin is useless if the pupillary margin is adhesive to the capsule throughout, and the iris hence can not retract."

Robertson says: We are hereby warned on such good authority in regard to the senseless employment of this valuable drug, but after sixteen years of daily experience in treatment of eye diseases, we have failed to see the first instance of fatal injury from its use. While on the other hand, all have seen eyes partially or totally deprived of sight by seclusion of the pupil and other inflammatory sequelæ that might have been prevented by the timely use of atropin.

On the head of the general practitioner usually falls the blame when an individual by any chance loses the sight of one or both eyes. The blame is laid on him by the people who claim they consulted the physician and the eyes were allowed to go blind; by the specialists who assert that had the eyes been treated properly blindness would not have occurred.

Inquiry would elicit the fact that the iris is allowed to contract and form adhesions in all parts, when an early dilatation would have resulted in ultimate cure, or in a condition in which an operation might alleviate.

Atropin accomplishes several things. It dilates the pupil, and so prevents adhesions; it paralyzes accommodation; it relieves neuralgic pain, promotes absorption of inflammatory exudate, reduces capillary congestion and frequently cuts short the disease. It may tear loose recent synechia. The writer advises atropin in all injuries involving cornea, iris, sclera, lens capsule, lens, ciliary body and choroid. He sums up his article by stating that too little rather than too much atropin is used; that it is better to err on the side of using it when not needed than vice versa.

(To be continued.)

PRESCRIPTION REPETITION AND ITS DANGERS.

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If there is any part in the physician's vocation where ethics and commercialism may conflict it is in the writing, dispensing and renewing of prescriptions. The prescription forms a bridge from the one to the other and, after leaving the office, is apt to remind the writer that pure ethics are good theory but sometimes poor practice. The piece of paper that the patient receives has a positive value; it may be negotiable and bring success or failure. It may be a source of profit to the pharmacist, a fountain of relief and comfort or disaster to the patient, and a means of building up a new reputation or shattering an old one to the physician. It is therefore natural that all three, the physician, the pharmacist and the public, should largely be interested in the prescription, and each one watch over it in his own way.

The question who owns the prescription after it has passed into the hands of the patient is one that has been argued many times, and a satisfactory solution has not yet been found. The physician who writes a prescription does not intend to give his advice forever, or to put on paper some new and finite product of his brain, as, for instance, the architect does when he sells the plan of a house. The prescription is given for one certain case only, and is not intended to apply to any other case. It goes to the pharmacist, who, according to custom, keeps it on file. In some countries it is compulsory for the pharmacist to keep the original for a certain number of years. In the United States the pharmacist generally keeps the prescription, but returns it to the customer, if the latter so desires, and always makes a copy when requested. The pharmacist may therefore be called the guardian of the prescription, but can make no claim to its ownership. The patient, as a rule, believes that the prescription is his property; in his mind it is the thing he paid for, and he claims to have the right of renewal whenever he pleases. To tell the patient that he has no claim of ownership would be resented most decidedly in most cases, and result in the withdrawal of his patronage if enforced. Custom, the most powerful factor in many economic arguments in the United States, certainly is on the side of the patient in this question.

There is a number of judicial decisions on record about the ownership of prescriptions; but far from set-

tling this vexed question to anybody's satisfaction, they rather increase the confusion by their contradictions. In one state the pharmacist was declared to be the owner, in another the physician, in a third the patient. Nor was the train of logic by which the learned judges arrived at these decisions always the same, and in some instances contrary to the arguing of ordinary mortals. In one case the judge decided that the evidence shows that the patient received a piece of paper from the physician, for which he paid a fee. He therefore became the owner of the piece of paper and has the right to do with it whatever he pleases. It would be interesting to hear this judge's decision on the question, "Who owns a prescription that was remitted to a druggist by telephone, the druggist or the telephone company?"

It is the writer's opinion that the physician alone can be called the owner of the prescription, and he is the only one to decide about its renewal or copy.

The query as given by the committee reads "Prescription Repetition and Its Dangers." The word "dangers" is unrestricted, it must therefore be applied to all three parties interested, the physician, the pharmacist and the public. That, under certain conditions, there is much danger for the physician in the indiscriminate renewal of prescriptions needs no argument. As was stated before, the prescription is, as a rule, given for a certain case, the physician not only determines the nature of the medicine, but also the quantity, and an excess can not only interfere with the progress of convalescence, but often cause serious damage. There are a number of drugs in our materia medica whose action will be beneficial if used under certain conditions, but injurious if continued indiscriminately. Every practitioner knows the beneficial influence of digitalis in certain cardiac disorders, but is also aware of the great danger attending its continued use. Nor is this all. Patients sometimes have the same prescription renewed after a long lapse of time, thinking they are ailing from the same trouble as before. And more than that, some of their friends may complain to them and they at once assume the right and ability to diagnose the case, and tell them to get such and such a prescription that their physician gave them, and that worked a wonderful cure.

In the renewing of prescriptions the pharmacist is often accused by the physician to be only too willing to consent to a renewal. Now it may be that some pharmacists are so mercenary that they will do anything for the sake of earning a few cents, but it is also true that the better class of pharmacists is not inclined to renew prescriptions indiscriminately, particularly where they are of a dangerous nature. The pharmacist is, however, between two fires. If he positively refuses to renew a prescription he is sure to lose trade, and he is not always sure that he does the physician a favor by so refusing. The writer, in his long career as pharmacist, has met many a physician that told him distinctly never to renew a prescription without his consent; but nearly without exception the physician would some day come into the pharmacy, asking, "Do you know that you did me great harm by offending Mrs. Blank. She wished the renewal of a prescription, and was much offended by your refusal." "Why, Doctor, but you told me yourself never to renew a prescription without your consent." "Yes," he would say, "but you must use discrimination. This lady is one of my best patients, and it will not do to offend her." It must also be said that in many cases the physician will give a prescription to a patient and state distinctly, "If your trouble returns have this renewed." It is therefore very unfair to expect a pharmacist to refuse renewal of prescriptions, for as long as the custom for renewal is so prevalent as it is in this country it is impossible to fight against it.

The greatest danger in prescription renewing lies with the patient. Only too often the sick will persuade himself for the sake of saving a physician's fee that his ailment is the same as the one of six months ago, and simply have his old prescription renewed. Or he noticed a temporary relief and foolishly considers this a cure, taking the medicine again and inclining naturally to gradually increased doses. Thus drug habits are formed, and the supposed blessing of the renewal of prescriptions is in reality a hidden curse that slowly but surely undermines his health. How many opium fiends have thus been made, how many cocain victims have thus been created, is beyond possibility of computation; but that much misery has been spread and nourished in this way is without question.

It will thus be seen that but little, if any, benefits can be ascribed to the renewing of prescriptions, but the dangers are manifold to all, the physician, the pharmacist and the patient.

If the renewal of prescriptions is an evil, the remedy alone lies with physicians. They should bring sufficient influence in the legislature to prevent by law the renewal of prescriptions without the prescriber's consent, and the pharmacist would willingly follow. With the refusal to renew should also go the refusal to give a copy, for as long as a copy is given, or the original returned to the patient, he may get the medicine from some other druggist, and accomplish his object in that way. Some physicians would answer that the best remedy lies in self-dispensing and avoid the writing of prescriptions entirely, and let the patient return when he wants more medicine. This argument, however, works both ways. The busy practitioner has no time to prepare his own medicine, and many physicians are not sufficiently trained in pharmacy to do so; they would therefore depend on ready-made tablets and pills. Scientific prescription writing would by this method become extinct, and the diagnosis of a case largely be guided by the tablets or the pills that the practitioner happens to have in stock; expensive drugs and chemicals would be banished and cheapness rather than efficacy be the leading motive to use a new remedy. Nor is there any safety for the physician or the patient in self-dispensing. The physician often accuses the pharmacist of not preparing a prescription properly or making a mistake. We will admit that this is sometimes the case; but if it is true that men who have devoted their whole lifetime to the preparing of prescriptions are apt to make mistakes, how much more is the physician subject to make mistakes, who is not particularly trained for such work and is from morning to night rushed for time.

In the state of New York there exists a law that a prescription containing a certain dose of opium, morphin or any similar preparation must not be renewed more than twice. This law was passed with the consent and knowledge of the physicians, who thereby admitted that the renewal of prescriptions is an acknowledged custom in the state, and put a check on indiscriminate renewals of certain prescriptions only. If, however, a restriction can be put on renewals of opiate prescriptions, it should not be difficult to pass laws against the renewal of any prescription unless the physician's consent is expressed. This consent can easily be given by a

short line on the prescription stating "The prescription must not be renewed or copied," the lines crossed out with the physician's initials written through it if the physician consents to the renewal.

It should be the object of the American Medical Association to institute a propaganda for the restriction of prescription renewal and thereby remove the danger that lies in such practices for the physician, the pharmacist and the public.

Clinical Report.

SALICYLATE OF SODA IN THE TREATMENT OF BASEDOW'S DISEASE.

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ST. LOUIS.

In the fall of 1900 my attention was called by Dr. J. Babinski of Paris to the treatment of exophthalmic goiter by the administration of salicylate of soda. At that time he saw, in consultation with me, a young man, aged 27, who had developed a goiter during the spring and summer of that year. The tumor presented pulsations like those seen in frankly developed Basedow's disease, but there were no other symptoms proper to that neurosis Additional symptoms consisted of great lassitude, marked mental depression, lack of ambition and interest in intellectual work, and an expressionless countenance quite foreign to the individual. The patient had been treated with iodid of potassium and tincture of iodin externally without effect. On the advice of Dr. Babinski three grams of salicylate of soda were administered daily. In less than a month, to use Dr. Babinski's expression,[1] the goiter had almost entirely disappeared. Two months later it could not be detected, the treatment having been continued without interruption. With the disappearance of the goiter there was a complete transformation of the mental condition and appearance of the patient; he gained in weight, and dyspeptic symptoms, which had been troublesome for months, quite disappeared or became insignificant. The patient resumed his work, and, during the two years that have since elapsed, there has been no recurrence of any of the symptoms which were so marked during the year 1900.

In the published notes of the use of salicylate of soda in Basedow's disease, Dr. Babinski refers to this case as one in which the diagnosis was doubtful, but he precedes his reference to it with brief reports of two other cases in which all the classical symptoms of exophthalmic goiter were present, and which were practically cured by the administration of salicylate of soda. Thus familiarized with the possible utility of this drug in the treatment of Basedow's disease, I began its administration in a case which came under my observation in February, 1901, the clinical notes of which follow.

Miss X., aged 28, consulted me Feb. 22, 1901. She presented a marked fine tremor of the hands and arms; the pulse was 130; a goiter of moderate size was very apparent, in which pulsation was visible, and the peculiar thrill of vascular over-action was easily felt. The large vessels of the neck could be felt pulsating unduly. There was no exophthalmos. The heart sounds were normal, and there was no evidence of other abnormality in the nervous system or the vegetative organs. It may be added that some slight choreiform movements were noticed later from time to time.

Subjectively the patient complained of lassitude and very annoying cardiac palpitation, augmented to an extreme degree on exertion and immediately after taking food; of mental depression and lack of ambition; of inability to control herself, and attacks of prolonged laughing under circumstances that distressed her extremely; of excessive and very annoying perspiration; of tremor that interfered with her work; of disturbed and unrefreshing sleep. Food usually caused distress, and constipation was more or less troublesome. All unpleasant symptoms were augmented at the period of the menses. There was no history of attacks of diarrhea.

The patient's family history presents a pronounced neurotic element. Both parents are "nervous"; one younger brother has been treated by me in two attacks of insanity, the first presenting maniacal symptoms some time after typhoid fever, the second, one year later, with delusions of a depressive, persecutory type that have never been fully corrected, though he is now (after one year) able to follow his usual occupation (bank clerk). Another brother and a sister present no mental or nervous abnormalities.

The patient had typhoid fever in 1890; in the summer of 1895 she went to Colorado for rest and change. At this time she had completed her third year in the university. In Colorado she was troubled by cardiac palpitation and breathlessness on the slightest exertion, doubtless owing to the elevation, and when she returned to her college work she found that marked tremor of her hands made it impossible for her to continue her work in the chemical laboratory. She graduated, notwithstanding her relative incapacity due to palpitation and tremor, and the year following was spent in Mississippi as a teacher. She continued to teach without interruption in her native place, to which she returned in 1898. She was finally led to consult me because of the aggravation of the tremor, pulsation and palpitation and the discovery that her neck was enlarging.

The patient was placed on salicylate of soda, gr. 30 daily, glycero-phosphate of calcium, gr. 15 daily, with a galvanism to the cervical sympathetics (5 milliamperes) three times a week. Diet and rest were regulated, but work was not interrupted. Other occasional measures were directed to digestion and the bowels.

Improvement was immediate and continuous. The treatment was uninterrupted through the months of March, April and a part of May, 1901. In May the electric treatment was stopped, but the salicylate was continued throughout the summer with occasional interruptions of two weeks' duration. In the following October electric treatment was resumed and continued, more or less regularly, through the winter and spring, and the salicylate was taken as before.

Before the end of three months of treatment tremor had disappeared, the heart was beating at the rate of 80, and there were few nervous symptoms. The goiter was still present, though reduced in size. During the winter and spring of 1901-2 the improvement was maintained under trying and annoying conditions of occupation.

At the present time there are no symptoms of Basedow's disease. The neck is a little larger than normal, but this would not be noticed without a knowledge of the history.

The patient states that she never expected her heart to become so calm as it is now. Influences that formerly excited her heart to extreme over-action are now without such an effect.

This case is entirely similar to two reported by Dr. Babinski.

A case of exophthalmic goiter seen in consultation in a woman over 50 years of age was much benefited by the salicylate of soda, but I am unable to give a subsequent history, beyond the statement that she has not been so well in years.

In October, 1902, Mrs. P., aged 46, consulted me for general "nervous" symptoms, congestive headaches and inability to endure or perform her ordinary household duties. She had a large goiter that had first appeared in her fifteenth year and had increased in size since. Originally large on the left side, for some months it had been increasing rapidly on the right side, and she attributed some of her difficulty in breathing to this. She had developed insomnia, because the increasing size of the goiter made it necessary for her to lie in a fixed position, for any change from it immediately aroused her with a feeling of suffocation.

The heart sounds were normal; she complained of occasional palpitation and a feeling of congestion and pulsation of the neck, with flushing of the face at such times.

Her mother had a goiter that came on in girlhood and disappeared some time after the menopause.

1. Du Traitement de la Maladie de Basedow par le Salicylate de Soude, Extrait des Comptes Rendus de la Société de Neurologie de Paris, Scéance du 7 février, 1901.

Thirty grains of salicylate of soda daily were ordered. Two weeks from the beginning of the medication the tumor on the right side of the neck had disappeared. Three months later the large tumor on the left side was decidedly reduced in volume. From the beginning there was an immediate change for the better in the "nervous" symptoms, and at the present time the patient feels perfectly well and capable of doing all that her circumstances of life demand. She can now walk blocks, whereas before she could not walk one without distress.

It should be remarked that the doses employed in these cases were far below those given in those reported by Babinski. In some cases now under observation I shall not hesitate to increase the dose should improvement fail to occur.

The precautions to be observed in the administration of salicylate of soda are: a pure salt, care to observe the condition of the kidneys, and care to avoid irritation of the stomach.

In the absence of any proof of the manner of action of salicylate of soda in Basedow's disease it is unnecessary to indulge in speculative theories to explain its effect.

3750 Lindell Boulevard.

New Instrument.

A NEW SELF-HOLDING RETRACTOR FOR USE IN GENERAL SURGERY.*

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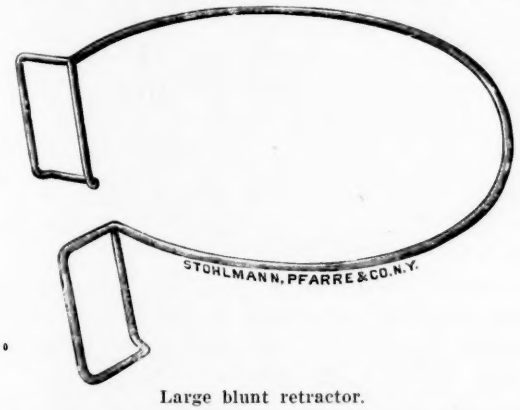
NEW YORK.

Although specialists have devised many forms of specula, there does not seem to have been made heretofore a practical self-holding retractor for use in general surgery. The simple instrument here presented has proved of frequent practical use during five months.

Perhaps its principal field of utility will be found in emergency operations where the desired number of assistants is not available. Even where the usual number of assistants is at hand the use of this instrument may be preferable to



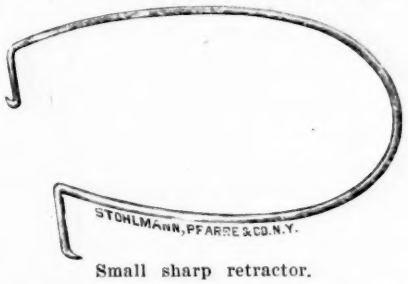
Large blunt retractor.

manual retraction, as this would permit the assistants to aid the operator in some other way.

It will never take the place of a hand retractor with an experienced brain behind it; nevertheless, it is easily applied and quickly shifted, and will stay where it is put. Beside steadiness and accuracy of strength, it possesses another advantage of no little importance at times, and that is that it takes up almost no room when in use. The circular spring rests flat on the surface of the skin, and there are no screws or handles on which ligatures will catch. The curve at the end is arranged to prevent the circle from rising above the surface and getting in the way.

The instrument is of nickel-plated steel wire, bent into three-quarters of a circle, with its ends turned aside into sharp or blunt retractors. To insert it, the ends of the wire are brought together by grasping them in thumb and fingers. The retracting ends are then put into the wound and the edges are pulled apart by the spring of the wire when released. Where the field of operation is especially large, it is sometimes convenient to use two of the retractors, their openings facing each other. In order to get different degrees of strength of pull, various calibers of wire and sizes of circles are provided, and for variety in the depths of wounds several sizes of retracting ends are made. For small or superficial wounds there are the simple sharp hooks, and for larger and deeper wounds the square-faced blunt ends. The complete set of these retractors consists of a nest of twelve—six sharp and six blunt ones, in graded sizes—which have been determined by experience to be of practical use.

The strength of pull used in retraction is generally proportionate to the size and depth of the wound, but varies, of course, with the nature of the tissues involved For instance, a pull of from four to ten pounds is commonly required in retracting wounds through the abdominal wall. A corresponding strength of pull will be found in the large blunt retractors.



Small sharp retractor.

On the other hand, a pull of but a few ounces, as is given by the smaller sharp retractors, will retract a wound through the skin alone. But in dense tissues, as of scalp or sole, a surprising resistance to retraction is offered. To meet such conditions the larger sizes of the sharp retractors exert a pull of from three to five pounds when their ends are together.

One or both of these nests of six large and six small sizes may be handily tied together and boiled with the rest of the instruments required in an operation.

* Presented before the Surgical Section of the Academy of Medicine, New York City, Feb. 9, 1903.

Some Baruch Don'ts in the Hydriatic Management of Fevers.—First. Don't bathe in cold water to reduce fever, but to refresh the fever-stricken patient. Second. Don't permit cyanosis or chattering of teeth. Stop! Third. Don't stop bathing because patient complains of chilliness. Fourth Don't raise temperature of baths on account of chilliness. Shorten bath and increase friction. Fifth. Don't neglect friction during every cold procedure; it prevents chilling Sixth. Don't disregard the fact that the Brand bath at 65 to 70 degrees is the ideal bath for typhoid. Seventh. Don't use the Brand bath in a bathroom. Eighth. Don't give up bathing because the ideal bath is not procurable. Other procedures are useful. Ninth. Don't use ice coil to abdomen. It has no refreshing effect and renders skin cyanotic beneath it. Tenth. Don't lose sight of the fact that the chief aim of all cold procedures is reaction.—"Denver Med. Times."

Manual Compression of Uterus to Arrest Post-Partum Hemorrhage.—A recent Lyons thesis ("Journ. de Med. de Paris") describes the method of arresting hemorrhage in vogue in the hospitals there, attributed to Professor Fochier. After expulsion of placenta and membrances, if there is hemorrhage from the empty uterus, four fingers of the right hand are passed up behind the uterus, between it and the spine and exert pressure on the "contractible part" of the uterus, pressing it forward against the left hand, which is applied to the abdomen above the pubis. The uterus is not flexed forward by the procedure, but the whole organ is slid forward, without altering the direction of its axis. The result is a compression of the placental sinuses, which arrests the hemorrhage directly, and stimulation of the contractility of the muscular fibers, thus aiding indirectly in the desired purpose. The procedure is also valuable as a diagnostic measure, and does not interfere with ergot, hot injections or saline transfusion later if deemed necessary.

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THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

It is to the American medical profession matter for congratulation that the modest beginnings of the Rockefeller Institute for Medical Research of two years ago have so speedily been succeeded by a gift from its founder large enough to permit of the building of a central institute and the planning of medical research on a larger scale in the city of New York. This undertaking, while undoubtedly of the highest significance for New York, is not a project of merely local interest; on the contrary, it is one which is of especial moment to every medical man and woman in the United States; indeed, we shall be surprised if the attention paid to it is arrested at our national borders, for, by virtue of the nature of the problems with which it will try to cope, the institute and its work will be a failure unless it quickly assumes a position of international importance.

In view of the large ideas of Mr. Rockefeller's advisers, it is also peculiarly gratifying to the medical profession and the public at large that the authorities of the institute have so soon made known the general plan underlying the foundation. Medical men watch with critical eyes all influences which may tend to improve or mar their vocation; it is only right and just that they should do so. An open avowal of intentions and prospects, such as has been made, apparently authoritatively, by the secretary of the board of directors of the new institute, can only meet with general approval, and THE JOURNAL hopes that this proper regard for professional and public interest and opinion may characterize the institute in all stages of its subsequent growth. That kind of publicity which makes an institution open to the observation and inquiry of the medical fraternity must not only exercise a wholesome influence on those who work in the institute itself, but is likely also to go far toward establishing public confidence in it, and toward assuring the people that they are obtaining from it the greatest benefits of which it is capable.

The institute began about two years ago with a fund of $200,000, the income of which has been devoted to the making of grants of from $200 to $1,500 each to investigators working at American or foreign universities. These grants, or similar ones, for the furtherance of individual studies are, we understand, to be continued, and the new plans recently announced are for additional rather than for substitutive undertakings.

The most important feature, as we have already announced, of the new plans is the decision to erect a central research institution in New York City, overlooking East River, to equip it adequately and to provide permanent endowment for it. The land has been purchased, plans for the laboratory buildings, including a small hospital, are rapidly approaching completion, a scientific director has been appointed, the organization of an investigating staff is in progress, and the authorities hope to begin work in the Central Institute by Oct. 1, 1904.

In addition to the organization and endowment of the institute for investigation in New York, the board of directors assumes the responsibilities of publication of *The Journal of Experimental Medicine,* and of plans for a campaign of education of the profession and the public by means of lectures, publications and hygienic museums—all bearing on the general problem of the diffusion of knowledge regarding the prevention and cure of disease.

Convinced as we are of the grandeur of the opportunity which confronts the board of directors, we can not help being solicitous that nothing shall be left undone to secure the greatest advantages possible in the expenditure of the money already donated in order that the founder who has contributed this first $1,200,000 may feel fully justified in providing subsequently the very large amounts which will be necessary to permanently endow the work which has been planned. We confess that the names of the members of the board go far to quiet fears lest any unwise disposition of the funds should be made, though we should have been glad to have seen on that board in addition to the men chosen from the Atlantic seaboard other scientists of equal caliber, say one from the Gulf region, one from the Pacific coast and one from the great Middle West. We feel, further, that the scope of the institute might have been very properly broadened by the representation on the board, beside pathology and bacteriology, of the two most fundamental sciences of medicine, anatomy and physiology; too great a scattering of the interests of such an institute, however, should, of course, be guarded against, and the directors may be wise in concentrating their efforts at first in the narrower field, provided an ultimate expansion so as to include the study of problems in the more basal sciences is kept in mind. Pathology can not progress far without the continuous provision of new facts and principles for application from the sciences of normal structure and function, sciences which in turn are dependent for their advance on the progress of knowledge and speculation in the fields of chemistry and physics.

There can be no doubt that the trustees of the Carnegie Institution have had the air cleared for them in a remarkable way by the host of suggestions and criticisms

which they have elicited from scientific men all over the country. The value of these suggestive and critical contributions has, it is true, varied enormously; among them, it must be admitted, are to be found many that are extravagant and some that can not be classified as other than feeble-minded, but it is just as true that many of them have been original and constructive, and that the study of the whole mass can not fail to give important clues for the organization of the productive scholarship of the country and to exercise a wholesome restraint on those, if any, whose tendency would be to waste money and cerebral energy on travels along roads that the minds of our nation, most capable of judging, regard as impracticable. Might it not be wise if the directors of the Rockefeller Institute for Medical Research encouraged a similar frank expression of opinion from their confrères; the eminence of these directors is such that a request from them would insure placing at their disposition the maturest thought and the results of the most legitimate flights of the imagination of scientific medical men in every state of the Union.

BEHRING AND TUBERCULOSIS.

We have made a brief editorial notice[1] of some of the results obtained by von Behring and his coadjutors in their investigations of tuberculosis. The opinion was expressed then that some of the fundamental problems in tuberculosis were approaching solution, more particularly the problems in immunity to tuberculosis. Behring has succeeded in demonstrating that by injecting cattle, especially young, with small quantities of cultures of tubercle bacilli isolated from human tuberculous lesions, there is produced a complete immunity to bovine tuberculosis so far as may be determined by ordinary experimentation. He designated this method of immunization as "jennerization." It resembles in the essential points the method elaborated by the immortal Pasteur of immunization by "vaccinati with attenuated virus.

Now the fact that cultures of human bacilli produce such solid immunity to virulent bovine bacilli can not be interpreted otherwise than as indicative of the close relationship between the tubercle bacilli from these two sources. Hence, Behring throws overboard Koch's dualistic theory, holding that the differences observable between bacilli of human and bovine origin are only such labile differences as are usually explainable on the score of special influences and modifications. Since Behring's first reports concerning successful immunization of cattle against tuberculosis, other investigators have published results which, though reached by slightly different methods, yet seem to substantiate the results he obtained. Thomassen, professor in the veterinary school at Utrecht, reports that under certain circumstances single injections of calves with cultures of human tubercle bacilli produce definite immunity to such quantities of bacilli of bovine origin as rapidly cause fatal miliary tuberculosis in control animals[2]—a brilliant confirmation of Behring's experiments. And on the heels of the Utrecht report comes one from Philadelphia by Pearson and Gilliland[3] of similar bearing. To quote one of the conclusions of these workers: "After repeated intravenous injections of cultures of tubercle bacilli from human sputum the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected." In the meantime, Behring and the workers in his institute at Marburg have had further opportunity to extend their observations on cattle immunized in the manner just outlined. Several immunized animals that had been exposed for over a year to spontaneous tuberculosis, by close association with tuberculous cattle, have been killed, but in none had tuberculosis become established.

The practice of immunizing young cattle has been extended on a larger scale with a view to testing most thoroughly its economic value and practical applicability. Hence it may be said with Behring that the principle of antituberculous immunization is now established on a firm basis so far as cattle are concerned, and that time alone can tell whether the particular methods now employed will yield the best practical results. As pointed out in the former editorial on Behring's great work, "it will form a landmark in the history of tuberculosis second in importance to no other work in this field since the discovery of the bacillus of tuberculosis." The next question is, to what extent will this production of immunity to tuberculosis in susceptible animals like cattle help in the struggle against human tuberculosis? This side of the problem is discussed in an interesting manner in a recent address by Behring in Vienna.[4] After developing the reasons why he believes that the bacillus of bovine tuberculosis is infectious for human beings, Behring points out that it is in infants especially that we find tuberculosis of intestinal origin. This he believes is due largely to the fact that early in life the intestinal epithelium does not secrete mucus and other substances in sufficient quantities to protect against the invasion of tubercle bacilli from the intestinal tract, as there is reason to believe is the case in older persons. In order to protect against tuberculosis in children, Behring suggests feeding with milk from cattle immunized against tuberculosis. In this way the susceptible child would get the benefit, he thinks, of the protective substances present in the milk of the immunized cows. This deduction will receive further support when it is shown by experiments that the milk of immunized cows actually contains protective antituberculous substances in ap-

1. THE JOURNAL A. M. A., Nov. 1, 1902, p. 1118.

2. Recueil de méd. vetérin., Jan. 15, 1903.

3. Proceedings Phila. Path. Society, March, 1903, vi.

4. Wiener kl. Wochenschrift, 1903, xvi, 337-342. See also a review of Behring's work in Semaine Medicale, 1903, xxiii, 85-86. Behring's most extensive publication is in Beiträge zur Experimentelle Therapie, 1902.

preciable quantities. For various reasons direct immunization of human beings after the methods employed for cattle is not yet open for discussion. Then, again, it is self-evident that if immunization of cattle can be carried out successfully in actual practice on a well-nigh unlimited scale, it will result necessarily in restricting greatly the spread of tuberculosis at least among cattle and consequently of tubercle bacilli in nature. Finally, the discovery of a means to protect susceptible animals against tuberculosis by active immunization offers the greatest hope for the further discovery of curative substances and the development of a specific antituberculous treatment.

SURGICAL TREATMENT OF TYPHOID PERFORATION.

So long as the sanitary conditions in this country continue indifferent or bad as they are at present the question of treatment of typhoid perforation will continue to be of great importance, for typhoid fever is one of the most common diseases in many of our large cities. This interest in the subject of perforation will continue, not only because of the frequency of the complication, which has been estimated by various authors to occur in from 1.2 per cent. to 11.38 per cent. of all cases, but because of the almost absolute certainty of a fatal outcome unless operative treatment is adopted. Much of the recent interest in this subject must be credited to Keen, who, by his careful study of a large series of cases collected from the literature, was among the first to point out[1] the most important features in diagnosis, rational methods of treatment and the urgent necessity of surgical treatment in all such cases. The early diagnosis of perforation is undoubtedly of first importance, for unless the condition be recognized before general peritonitis has occurred the advantages of early operation are lost. One of the most satisfactory discussions of the diagnosis of typhoid perforation which has thus far appeared is contained in a paper by McCrae and Mitchell,[2] who report eight operations for perforation, two exploratory operations in cases in which no perforation was found, and eleven suspicious cases which were not operated on, out of 275 cases of surgical complications occurring during typhoid fever observed in the Johns Hopkins Hospital during two years.

Among the important points brought out in this paper are the dangers of masking symptoms by the use of opium. Too often the occurrence of abdominal pain is considered by the attending physician an indication for the use of opium in some form, and by its use the symptoms are masked until general peritonitis develops and a fatal outcome is almost inevitable. Much stress is laid on the importance of careful observation of all cases of typhoid from the beginning of the disease and watching carefully any abdominal symptoms. In this way the condition may be recognized at the time of onset of the symptoms. Notes on the patient's condition should be made on paper, and not left to the physician's memory. In case suspicious symptoms occur the condition should be carefully watched from hour to hour and the surgeon should be called at the time of onset of abdominal symptoms. No symptom was found constantly present in all the cases, and no significance is attributed to the absence of any one symptom. The occurrence of symptoms is important, their absence is not. The most important symptom is the sudden onset of abdominal pain. Other symptoms, such as nausea or vomiting, rise of pulse rate, change of temperature, impairment of respiratory movements, muscle spasm, decrease of liver dulness, leucocytosis, etc., may be of some significance, but no conclusion can be drawn from the absence of many of them. Later on the symptoms do not differ from those of general peritonitis. The difficulties of diagnosis are evident, and with the slight risk of an exploratory operation doubtful cases should not be allowed to go beyond the limit of recovery without operation. An exploratory operation was done in two cases in which no perforation was found. In one the symptoms were due to intestinal hemorrhage; in the other to low-grade peritonitis. The first patient died; the second recovered. Perforation occurred in eight cases, seven of which were operated on with two recoveries, a third patient dying of toxemia a week after operation. All of the cases, except two accompanied by hemorrhage, were recognized within nine hours of perforation. In one case operation was not advised because the patient was in extremis. Eleven cases with suspicious abdominal symptoms were not operated on. Of these two died and the necropsy showed no perforation; the remaining nine recovered. In the treatment of perforation closure with purse-string suture reinforced by two or three Halsted sutures is recommended. This is essentially the same treatment which has been recommended by Keen and most other writers on this subject.

A new suggestion with regard to the treatment of these cases comes from Escher of the Triest City Hospital in Austria, who finds from a study of the literature records of ten cases of typhoid perforation treated by enterostomy with 40 per cent. of recoveries. This is in striking contrast to the 20 to 25 per cent. of recoveries following the usual method of suture of the perforation, and it led Escher to adopt this method of treatment as a routine. Of 4 cases treated by bringing the perforation up into the abdominal incision and suturing it there, which Escher treated personally, only one died. He believes that this is the method of choice, for not only is much time saved, but threatening symptoms of paralytic ileus and unfavorable symptoms of distension caused by paralysis of the intestine are avoided in this way. Suture is advised only in the most favorable cases, late in the disease when the general condition is good, the operation early and no distension present.

Whatever method of treatment may be adopted, physicians should always keep in mind the importance of

1. Surgical Complications and Sequels of Typhoid Fever, Philadelphia, 1898, and THE JOURNAL A. M. A., Jan. 20, 1900.
2. Johns Hopkins Hospital Reports, vol. x, Nos. 6, 7, 8 and 9.

early diagnosis, and to this end every abdominal symptom should be observed and noted with greatest accuracy. If typhoid fever cases are thus carefully observed and operated on early when operation is indicated valuable lives will be saved every year. Perforation is probably as common in the hospitals of this and other countries as in those few hospitals from which yearly reports of successful operations are coming. The remarkable success which Escher reports from the treatment of these cases by using the perforation as an enterostomy opening would certainly seem to encourage the further employment of this method.

A COMPREHENSIVE DEFINITION OF THE PRACTICE OF MEDICINE.

We published in our last issue[1] the law recently passed amending the medical practice act of the state of Alabama. Alabama in the past has had an advantage over most other divisions of the country in that its medical law recognized no schools. All that is required is a knowledge of the essentials of medicine. In this way they have been able to keep out quacks and faddists who can not meet the requirements of the law by passing an examination in the fundamental branches. Recently an attempt was made to establish a board of osteopathic examiners, and the bill was at first favorably reported on in the legislature. After due discussion a substitute—the amendment published—was adopted and carried. In the framing of this it has seemed fit to the Alabama legislature to be a little more concise in its statement of the qualifications required for certificates to practice medicine, and in the new law it is worded "an applicant for a certificate of qualification to treat diseases of human beings by any system of treatment whatsoever," which permits all schools to practice provided they meet the requisite conditions. This is still further specified in the close of the paragraph, which states that a certificate shall be issued which shall entitle the applicant "to treat any and all diseases of human beings in this state in any manner that he may deem best." Neither homeopaths, osteopaths, Eddyites or any other class can claim that they are excluded, except it be by their own deficiencies. We believe that a simple statement such as the above is better in every way than the more elaborate definitions. The more verbiage that is expended on the subject the greater the chance for some error to slip in, or some legal evasion to be employed. Treating diseases of human beings "by any system of treatment whatsoever" covers the subject as comprehensively and fairly, it seems to us, as any combination of words that could be used.

INSANITY CAUSED BY "MORALITY."

A writer in a popular review,[2] studying the occurrence of insanity in a limited locality in the north of Ireland, reaches some rather remarkable conclusions. The chief causes of insanity are, he claims: 1, Intermarriage of predisposed persons; 2, the postponement of marriage to the age at which the sexual function is enfeebled; 3, marriages where children are produced as fast and as long as the natural process allows. This last is, he thinks, the greatest and most common cause of insanity, idiocy and neurasthenia. Reasoning from these assumptions, he declares that modern morality and marriage laws are directly opposed to the welfare of the race; that the normal physiologic condition is one in which apparently any kind of temporary contract would be permissible, and that all the social regulations which the experience of mankind has deduced are faulty from a biologic point of view. There is no doubt, of course, that rapid and excessive childbearing may have its effect on the offspring, and that some children born of aged parents are sometimes mentally handicapped in the struggle for existence. It is only the superficial observer, however, who sees in these conditions, especially in the limited region of a long-settled country depleted by immigration of its most vigorous population, any facts that will serve to formulate rules for the population in general. The cause of insanity is a complex one, and probably the great advance in civilization, invention, etc., acting on minds that are not prepared for it and the stress of modern conditions of living are far more effective, certainly as a general rule. He holds, also, that it is a generally recognized fact that those whose duties bring them in contact with the insane become predisposed to the disease. This is a popular error which can be easily refuted, but he takes it as a self-evident fact and basis for his remarks, holding that association gradually aggravated the conditions he describes. Therefore he attributes to two factors, conventional morality and association, the chief increase of insanity. The article is a pretty good example of false reasoning from defective data. The physiologic social conditions which the writer in question seems to think would be a preventive of mental disease, are absolutely impracticable under modern civilization. It does not speak well for the bent of his mind that he should thus ignore actual realities in favor of a very strained and not very moral or edifying theory.

CHORIONIC STRUCTURES IN TUMORS OF THE TESTICLES.

The occurrence of chorionic epithelium and of syncytium elsewhere than in connection with pregnancy, normal and pathologic, at first thought seems entirely unlikely and paradoxic. There have been described, however, a considerable number of mixed or teratomatous growths of the testicle in which were contained large cells and syncytial masses similar to those of the placenta and of the interesting tumor that occasionally develops from the placenta, variously designated as chorioepithelioma, syncytioma, placentoma, etc. Peculiar testicular tumors of this kind have been observed from time to time and described under different special names—as angioplastic sarcoma by Malassez and Monod, who regarded the masses of anastomosing giant-like cells with spaces often filled with blood vessels as incompletely developed new vessels. Within the last year Wlassow[1] and Schlagenhaufer,[2] independently of each other, describe tumors in the testicle with syncytial masses and hydatidiform structures both in the primary

1. THE JOURNAL, April 11, p. 1000.
2. Westminster Review, London.

1. Virchow's Archiv, 1902, clxix, 220-240.
2. Wien. kl. Wochenschr., 1902, xv, 570-580 and 604-606.

and secondary growths. Wlassow calls such tumors *epithelioma syncytiomatodes testiculi*. In the metastases the appearances were quite identical with those of chorioepithelioma developing in connection with pregnancy. Schlagenhaufer makes the same observations, and states that had the source of the tumors been unknown they would undoubtedly have been referred to the placenta. Carey[3] also describes syncytial and decidual structures in a testicular teratoma. To complete this interesting demonstration there are described also testicular tumors with distinct chorionic villi undergoing myxomatous degeneration, i. e., tumors with structures corresponding to parts of hydatidiform moles. This, too, is an old observation. Curious formations, generally intravascular, have been likened by various authors to the myxomatous villi of hydatidiform moles. Schlagenhaufer demonstrates chorionic villi in the metastases of an early example of this sort of tumor first recorded by Breu. In order to explain this finding of chorionic structures in so unexpected a locality as tumors of the testicle Wlassow suggests that it concerns the chorion of an embryo which forms the testicular teratoma (embryoma), while Schlagenhaufer traces them to the inclusion within the testicle of remnants of fetal membrane, more particularly parts of the epithelial lining. Be that as it may, the observations noted certainly serve to excite wonder and increasing interest in the theories as to the origin of the teratomas (embryomas) of the testicle and ovary.

URBAN MORTALITY.

A recent weekly Bulletin of the Chicago Health Department contains a discussion of urban death rates that gives some encouraging indications of improved city sanitation. In 1893 the claimed Chicago death rate of 16.92 per thousand of population was denounced as an impossible figure for any city with over 1,000,000 inhabitants. No ratio less than 18 per thousand could be accepted was the verdict of an eminent sanitary statistician of that day. At the present time, according to the Bulletin, New York is the only city of the first class that still sustains the above assertion, its mortality in 1902 was 18.75, while that of London was 17.70, and that claimed for Chicago 14.53. The present health administration of New York City has, however, in one year reduced the death ratio more than 14 per cent., and therefore promises well to bring its statistics down below the alleged "impossible" figure of 1892. Of course, the statistics of a single year prove little, but if they are the latest figures showing a steady decline for years they suggest much, even the possibility of bringing urban mortality down to the figures of well sanitated rural communities. Chicago's low death rate is due probably more to the fact that it has a bordering area of 20,000 square miles of pure lake air, than to its own sanitary righteousness as so far perfected. This is shown in the death rate from typhoid fever and other disorders that depend largely for their prevalence on certain unsanitary conditions. The Bulletin gives some suggestive comparisons of the mortality in London and Chicago respectively from three of the notifiable diseases, diphtheria, scarlatina and typhoid, showing that the ratio in Chicago is almost double that of London. On the other hand, measles, whooping cough and diarrheal affections reverse the condition and the mortality in proportion to population in Chicago is less than half that of London. It is not exactly clear why this latter difference should exist, but very probably the pure air with the better ventilation of the "windy city" may have as much to do with it as any other one factor. Another matter, however, which may be a factor to some extent in causing the higher death rate from such compulsorily notifiable disorders as diphtheria and scarlatina, and which is so accepted by the Chicago health commissioner, is the hospital provision for such cases. With proper hospital care and isolation a lowered death rate from these disorders might naturally be expected, as well as much in the way of prophylaxis. This is shown particularly in such disorders as smallpox, in which case hospital isolation is the first resort after the recognition of the disease. It is very probable that similar brilliant results would follow isolation of other properly notifiable diseases.

3. Bull. Johns Hopkins Hospital, 1902, xii, 268-279.

Medical News.

CONNECTICUT.

Hospital for Greenwich.—It is announced that $30,000 has already been subscribed toward a hospital for Greenwich. It has been decided to raise $100,000 before any work is started.

Sanatorium Fire.—On March 16 the residence and sanatorium of Dr. George F. Converse, New Haven, were seriously damaged by fire, caused by an explosion of benzine. The family of Dr. Converse and the patients were removed from the building without casualty.

Infectious Diseases.—Smallpox was reported during February to exist in 6 towns, with 47 cases; there were 1,099 cases of measles, in 66 towns; 339 of scarlet fever, in 55 towns; 3 of cerebro-spinal fever, in 2 towns; 170 of diphtheria, in 43 towns; 344 of whooping cough, in 40 towns; 20 of typhoid fever in 12 towns, and 12 of consumption, in 6 towns.

February Deaths.—During February 1,294 deaths were reported in the state; 124 less than for the previous month; 170 more than for February, 1902, and 98 more than the average for February for the five years preceding. The mortality was at the rate of 17.1 per 1,000 per annum. Infectious diseases caused 312 deaths, or 24.1 per cent. of the total mortality. Diseases of the nervous system caused 144 deaths; pneumonia, 176; consumption, 101; influenza, 86; bronchitis, 55; heart disease, 134, and violence, 50.

GEORGIA.

Army Hospital at Chickamauga.—The contract for the post hospital at Chickamauga has been awarded at $52,561.

State Board of Examiners.—The board held its annual meeting at Atlanta, April 3, and elected Dr. Joses B. S. Holmes, Atlanta, president; Dr. Fred D. Patterson, Cuthbert, vice-president, and Dr. Isham H. Goss, Athens, secretary. Out of the 57 applicants for license to practice medicine in the state, 47 passed the examination; 5 out of 6 colored applicants passed.

Atlanta College Commencement.—The graduating exercises of the Atlanta College of Physicians and Surgeons were held March 31. Owing to the change in course from three to four years, the class was relatively small, numbering only 39. Hon. Hugh M. Dorsey delivered the address of the evening, and Judge Howard Van Epps, president of the board of trustees, conferred the degrees.

State Board of Health Needed.—Georgia is one of the few states which has no state board of health. Drs. Charles Hickes, Dublin, president of the Medical Association of Georgia, and George Brown, Atlanta, recently called on the governor to urge on him the necessity of the establishment of a state board of health, and obtained from him his endorsement and his promise

that he would send a special message to the legislature recommending the creation of the board.

ILLINOIS.

Quarantine Raised.—The town board of health of Lake Forest raised the quarantine which has existed for two months on account of the scarlet fever epidemic, April 10. In all, 101 cases were reported, a large proportion of the patients being children, and only two deaths occurred.

Births in 1902.—During the year just ended 76,608 births were reported to the State Board of Health. Of these 38,671 were males and 37,325 females, and the sex was not reported in 612 instances; 572 twins were born and 15 triplets. Stillbirths numbered 1,767. Cook County leads with 19,115 births; then follow La Salle County with 1,737; Will, with 1,481, Vermilion, with 1,418; Peoria, with 1,388; Sangamon, with 1,358; Kane, with 1,297; McLean, with 1,267; Madison, with 1,105; St. Clair, with 1,064, and Champaign with 1,057. These figures are not complete, and the births for the year are estimated at 85,000.

Chicago.

Personal.—Dr. Joseph Jeffrey, a colored physician, was adjudged insane, April 9, and committed to the Cook County Insane Hospital, Dunning.

Deaths of the Week.—The total deaths were 592; 43 more than for the previous week and 30 more than for the corresponding week of 1902. This represents an annual death-rate per 1,000 of 16.36. Pneumonia again heads the list with 135 deaths; consumption caused 59; nervous diseases, 45; heart disease, 41; bronchitis, 30; cancer, 28; Bright's disease, 27, and violence, 26. Measles is given as the cause of death in 10 cases, and whooping cough in 13 cases.

Smallpox.—The isolation hospital received 21 new cases of smallpox during the week ended April 11. Of these 5 were negroes; 6 were under 6 years of age; 18 had never been vaccinated, and the remaining 3 had old doubtful vaccination scars. The hospital record for the year is as follows: January, 50 cases; February, 55; March, 60; April, 26 cases to date; total, 191 cases received; deaths, 28; discharged recovered, 106; remaining under treatment at the close of the week, 57. Last year at this time there were 40 in the hospital.

Fear Rabies.—The Chicago Medical Society, at its meeting, April 8, considered the danger from hydrophobia. Dr. Arthur D. Bevan read a paper on the prevalence of rabies, which he said had caused at least 91 deaths since 1891. The society passed the following resolution:

> The Chicago Medical Society, through its board of councilors, calls the attention of the city authorities to the fact that the disease hydrophobia is prevalent in the city; that it is possible to practically eradicate it by proper dog laws properly enforced. Therefore it respectfully petitions the mayor and the common council to immediately take such steps as are necessary to accomplish this result.

Measles Not Light Disease.—In the Bulletin for the week ended April 11, the department of health earnestly warns the public against the prevalent idea that measles is a disease to be lightly considered. It says:

> Of the total 207 cases of the contagious diseases reported during the week 87, or nearly one-half, were of measles, and during the first three months of the year 69 deaths were reported from this disease as against only 20 during the corresponding period of 1902. Th's is two and a half times as many as last year, and in proportion to population it represents an increase of very nearly one-third over the average of the previous ten years—the ten-year average rate being 0.94 and the 1903 rate being 1.22 per 10,000 of population. . . . About 60 per cent. of all deaths from measles are among those between 6 months and 2 years of age. After the fourth year the mortality rate falls rapidly, but one out of every four infants attacked with the disease dies. . . . Only a relatively small proportion of the deaths from measles are reported as such—the immediate cause of death, such as broncho-pneumonia, capillary bronchitis, lobar pneumonia or similar grave affection developed during an attack of measles, being given as the actual cause. Next to scarlet fever measles is the most serious of the diseases of childhood in its after effects on many of those who recover.

KENTUCKY.

Asylum Investigation.—The committee on investigation from the board of commissioners of the Central Kentucky Asylum for the Insane, at Lakeland, has developed some startling facts in regard to alleged brutality on the part of the attendants, and as a result, in the past two weeks, three attendants have left, two having been dismissed.

Louisville.

New Jewish Hospital.—It has been practically decided that the new Jewish Hospital will be located on Barrett avenue, near the present St. Anthony's Hospital, and the construction will soon begin. The building is to be of ample proportions.

MARYLAND.

Smallpox at Homburgsville.—In a negro camp, on the line of the electric railway from Baltimore to Sparrow's Point, a water suburb, five cases of smallpox have been discovered. The negroes in the camp came from Virginia.

Hospital for Easton.—The physicians of Talbot County met at Easton, April 8, to discuss plans for a public hospital there. Dr. E. M Hardcastle presided. It was the sense of the meeting that each district of the county should be represented on the board of directors. The matter was further discussed at a public meeting April 16.

The Maryland Examination Record.—The statement regarding the highest honor in the state examinations having been carried off by a woman and a graduate of the Woman's Medical College (see issue of March 28) applies to the examinations of the Spring of 1902. There were then 105 applicants, of whom 88 were graduates eligible to examination for license to register as physician and surgeon. The woman in question (No. 57) received an average of 92¾. At the examinations held in December, 1902, of the 30 applicants for license the honors were taken by a Johns Hopkins graduate, with an average of 95¼. It is of interest to note the results of the above examinations. Of the 88, 64 received the average of 75 required to pass. Of the 17 second year students, 12 failed at the same examination. In the December examination, of 30, 9 only passed, and of the 11 who took re-examination at that time not one passed.

Baltimore.

Personal.—Dr. William H. Howell, dean of the Johns Hopkins Medical School, has been elected a member of the American Philosophical Society.

Crim Antiques Auction.—The collection of antiques left by Dr. Crim will be sold by auction, beginning April 22. The catalog lists nearly 3,000 articles.

Appointment.—The supervisors of city charities have appointed Dr. Henry D. Purdum resident physician to the insane department of Bay View Asylum for the ensuing year. Dr. Purdum has been acting as resident physician.

Sickness and Deaths.—The deaths last week were 164, an annual rate of 15.31 per 1,000. Scarlet fever is on the increase and influenza still prevails. Pneumonia has again come down below consumption, the respective figures being 17 and 21.

Suit Against Telegraph Company.—Dr. Howard A. Kelly has brought suit for $2,000 damages against the Western Union Telegraph Company, for alleged negligence to transmit two telegrams to him last October, whereby he was prevented from performing an important operation at Cambridge, Md.

Commitment of the Insane.—In an address before the Bar Association, Dr. George J. Preston, secretary of the Lunacy Commission, stated that the present commitments of the insane signed by two physicians are not legal and that persons so committed may be released under habeas corpus. He proposed an insane law providing for examination by two physicians, whose certificates shall be sworn and submitted to a judge of the Court of Records. He thought the lunacy board should have more power to move and transfer cases, and that all insane people should be under state control instead of in private institutions. Dr. E. N. Brush of the Sheppard and Enoch Pratt Hospital spoke on similar lines.

MASSACHUSETTS.

Personal.—Dr. Edwin Welles Dwight, Boston, has been appointed medical director of the New England Mutual Life Insurance Company, vice Dr. John Homans, deceased.

Smallpox Expense Not Limited.—The legislature has refused to set a limit to the expense incurred in the care of smallpox patients. A bill was urged limiting the liability of cities and towns to $35 per week.

Deaths of the Week.—The 219 deaths in Boston for the week ended April 11 make an annual death-rate of 19.48 per 1,000. Diphtheria caused 8 deaths; scarlatina, 3; typhoid fever, 3; tuberculosis, 26; pneumonia, 29; whooping cough, 2, and heart disease, 29. The number of children who died under 1 year was 36, and under 5 years 52.

Changes in Hospital Staff.—Further changes in the hospital staffs are made by the appointment of Dr. Daniel Fiske Jones as surgeon to out-patients of the Massachusetts General Hospital, Boston, and Dr. William H. Smith, physician to out-patients at the same institution, while Dr. Edwin A. Locke is appointed physician to out-patients at the Boston City Hospital.

NEBRASKA.

Asylum To Be Rebuilt.—The senate has passed the house bill appropriating $100,000 to rebuild the Norfolk Hospital for the Insane.

Fund Grows.—More than $40,000 has been raised toward the building fund of the Methodist Hospital, to be erected in Omaha.

Suit Dismissed.—The suit of Mrs. Sadie Coleman against Dr. John E. Summers, Jr., Omaha, alleging malpractice and claiming $20,000 damages, has been dismissed without prejudice.

New Building for Asylum.—The house committee on asylums has recommended the appropriation of $25,000 for a new building at the Institute for Feeble-Minded Youth, Beatrice.

Personal.—Dr. Daniel R. Brower, Chicago, has accepted the invitation to deliver the doctorate address before the medical department of the University of Nebraska at Omaha, May 14.

NEW YORK.

More Smallpox at Rochester.—Rochester has another epidemic of smallpox to combat. Within 24 hours 5 patients were sent to Hope Hospital.

Hospital Incorporated.—The Frederick Ferris Thompson Hospital, Canandaigua, has been incorporated This hospital has been given to the village by Mrs. Thompson, in memory of her husband, and is now rapidly approaching completion.

Coroner's Bill Recommitted.—Senator Elsberg's bill abolishing the office of Coroner in Greater New York, which it was announced last week had been passed, was referred back to the Cities Committee by the Assembly, April 8, by a vote of 62 to 48.

Arrested.—Dr. George A. Lyons, New Rochelle, was arrested and held to the grand jury on the charge of manslaughter in the first degree. The arrest was the result of an investigation by the coroner into the death from blood poisoning, of Mrs. William Sears, of New Rochelle.

Approve Regents and Stevens Bill.—Physicians of Rochester have united in a petition to the senators and assemblymen from Monroe County, expressing their approval of the Stevens bill to unify the state's system of education and to place it all under the control of the Board of Regents, and furthermore, commending the board for its impartiality in the conduct of examinations for licenses to practice medicine.

Bill Against Consumptive Sanatoria.—Assemblyman Bedell has introduced a bill making it obligatory to have the consent of the county board of supervisors in order to institute a consumptive sanatorium or tent hospital. This action is taken in anticipation of Health Officer Lederle's desire to organize consumptive tent sanatoriums in selected places outside of Greater New York for the proper treatment of the consumptive poor of New York.

Parochial Schools Exempt.—Attorney-General Cumsen has decided that compulsory vaccination does not apply to the parochial schools. This is a step backward in the endeavor of the state to combat the smallpox epidemic. Had this ruling prevailed during the visitation of smallpox in Buffalo, where its spread was confined to the Polish district, where the children attended the Polish parochial schools, the spread of smallpox could not have been successfully combated in Buffalo.

Personal.—Dr. Luzerne Colville, lecturer on surgery, Cornell Medical College, Ithaca, has resigned on account of disagreements with the Infirmary Committee regarding the management of that institution.——Dr. Thomas L. Craig, Davenport, has contracted smallpox.——Dr. Henry C. Hendrick, McGrawville, was the guest of honor at a banquet given by the Cortland County Medical Society, April 9, in commemoration of his semicentenary of practice.——Dr. Floyd Palmer, East Meredith, has been appointed medical interne at the Matteawan State Hospital.——Dr. Wallace Clarke, has been appointed health officer of Utica, vice Dr. Peter J. Campbell, resigned on account of ill-health.

Buffalo.

Fraud Fined.—H. H. Bridgwater, who is said to have conducted business for the notorious Antonius during his confinement in jail, was arraigned on the charge of violating the health laws in assuming the title of physician and in practicing medicine without a license, and was fined $50.

Personal.—Dr. Herman E. Hayd has been elected attending surgeon to the German Hospital, vice Dr. Herman Mynter, deceased.——Dr. Augustus G. Pohlman of Buffalo, who has been studying for two years at Freiburg, has returned.——Dr. Chauncey P. Smith has been appointed surgeon of the Buffalo, Rochester and Pittsburg Railroad.

Antonius in Prison.—From time to time mention has been made in these columns concerning the operations in Buffalo of Antonius, a so-called healer, who, by paying large advertising rates to the public press muzzled them, and, by virtually making them accessory to his unlawful practices, swindled hundreds of sick and crippled victims, many of them giving up actual necessities of life in order to gather sufficient money to pay the exorbitant fees exacted by him. Antonius was sentenced to serve nine months in the penitentiary. In the case of his assistant, Dr. Frankius Temple, who pleaded guilty to conspiracy to defraud, sentence was suspended

Daily Press Censured.—The grand jury has censured the papers as follows:

> The grand jury of the County of Erie (Buffalo) for February, 1903, believing that the newspapers of Buffalo are and ought to be powerful factors in the improvement of existing conditions in matters affecting our moral and municipal life . . . does hereby express its emphatic disapproval of the course of some of our reputable newspapers in allowing the use of their columns for advertising transparent fakes and frauds for deceiving the public. The grand jury believes that in so doing these papers are lending their aid to schemes for fleecing the credulous and unwary instead of protecting the interests of the public by exposing such frauds or by refusing to publish such advertisements.

New York City.

Annex to Hospital.—Plans have been filed for a six-story brick hospital, 140 by 61, to be an annex to the Willard Parker Hospital. The Department of Health is the owner of the property. The building will be of limestone and brick and will cost $550,000.

Hospital Saturday and Sunday Collection.—The total collections will reach $82,000 and, after deducting $9,902.75 especially designated, along with the necessary expenses, there will remain about $68,000 for distribution to the hospitals of the association on the basis of the free work done.

Arrested and Discharged.—Dr. A. Palmer Dudley was arrested at the instigation of the husband of a patient on the charge of being a suspicious person. The reason for the action was that Dr. Dudley, after consultation with the physician of the patient, had operated in order to save her life. On hearing the evidence, the magistrate promptly discharged Dr. Dudley.

"Spit-Cards."—Beginning March 24, conductors of street cars were instructed to hand to violators of the ordinance against spitting a small yellow card on which the following notice is printed:

> You are violating the law against spitting. You are subject to a fine or imprisonment or both. By order of the board of health.
> E. J. LEDERLE, President.

Personal.—Dr. O. L. Mulot, Brooklyn, has resigned from the medical staff of the Bethany Deaconesses' Hospital and Home.——Dr. Charles Wesley Hall, who has been in charge of the quarantine station at Hoffman Island, has resigned and will resume practice in the west.——Dr. Frederick A. Dillingham, assistant sanitary superintendent for Manhattan, who has served in the department for twenty-one years, was retired, with an annual pension of $1,200.

OHIO.

Smallpox Alarming.—The smallpox situation in the state is causing alarm to the authorities. In the last 8 weeks 1,363 cases have been reported, with 73 deaths. The State Board of Health is vigorously urging general vaccination.

Personal.—Dr. James J. La Salle, Toledo, police surgeon and assistant health officer, has resigned and will study abroad.——Dr. William A. Ewing, Dayton, has been appointed jail physician.——Dr. Christian R. Holmes, Cincinnati, is visiting Denmark and will visit other points in Europe.——Dr. K. S. West has been appointed assistant physician at the Cleveland State Hospital for Insane.——Dr. Edward J. Wilson, Columbus, has been appointed a member of the Ohio State Board of Medical Registration and Examination for a term of seven years.

PENNSYLVANIA.

Hospital Contract Awarded.—The contract for building the Allegheny General Hospital has been awarded to a Philadelphia firm.

Hospital Appropriation Bills Signed.—Governor Pennypacker has signed bills appropriating $260,000 each to Jefferson Hospital and to Medico-Chirurgical Hospital, Philadelphia.

Embezzler Sentenced.—J. Howard Climenson, defaulting treasurer of the Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne, having pleaded guilty to three indictments

charging him with embezzling $9,106 from the institution, was sentenced to serve eight years in the Eastern Penitentiary. His defalcations are said greatly to exceed the amount charged in the indictments.

Country Convalescent Home.—A new country home for convalescent children has been established at Gwynedd, Montgomery County. The institution is a large handsome mansion on the brow of a hill. Pure air, pure water, choice food and outdoor recreation are provided. A few philanthropists of Philadelphia have chartered the home and have thus far supported it. Its expenses are estimated at $4,000 a year.

State Board of Barbers.—A bill creating a state board of barbers awaits the action of the governor. The board would consist of two master and three journeymen barbers who should formulate sanitary regulations and rules for the conduct of shops. The bill would impose a license fee of $1 on every barber of first, second or third-class cities or in boroughs of 10,000 population. The bill is generally commended by the trade.

Bills Passed and Pending.—A bill appropriating $50,000 for combatting smallpox in Pennsylvania has been passed by the legislature and signed by the governor. The fight against smallpox is to be conducted under the direction of the State Board of Health, with headquarters, perhaps, at Johnstown. ——The bill introduced into the legislature providing for the licensing of osteopaths was defeated in the house by a vote of 89 yeas to 67 nays, 14 less than a constitutional majority.

Governor Wants Appropriation Bills.—The governor has asked that the bills passed on favorably in the legislature appropriating money for hospitals connected with medical colleges all be sent to him at once. The following, of such appropriations, are recommended: Medico-Chirurgical Hospital, $290,000; Jefferson Hospital, $260,000; University of Pennsylvania Hospital, $175,000; Hahnemann Hospital, $125,000; Polyclinic Hospital, $55,000; Garretson Hospital, $40,000; Women's Hospital, $25,000, all of Philadelphia, and Reineman Maternity Hospital, Pittsburg, $25,000

Public Health and Charities.—The bill providing for the department of public health and charities on Philadelphia has become a law. This new department supersedes the Department of Charities and Correction, which is abolished. The bureau of Correction is now placed in the Department of Public Safety. The bill provides that:

> The Department of Public Health and Charities shall be under the charge of a director and an assistant director, whom the mayor shall appoint, to which department shall be confided the care, management, administration and supervision of the public health, charities, almshouses, hospitals and all other similar institutions, the control or government of which is intrusted to the city.
>
> The director of public health and charities, as chief executive officer thereof, shall appoint, supervise and control all the subordinate officers and employes attached to the department, and shall appoint all vaccine physicians and health inspectors; and all hospitals belonging to the municipality where provision is made for the care of contagious diseases shall be under the immediate supervision and control of the director of public health and charities.
>
> The director of the Department of Public Health and Charities shall also be appointed by the mayor, but his term of office shall be four years from the date of his appointment if he shall so long behave himself well.

An ordinance has been introduced into councils providing for the new department, an appropriation being necessary. The annual salary of the director of the Department of Public Health and Charities is to be $10,000; assistant director, $4,000, and chief clerk, $2,500.

Philadelphia.

The New Jefferson Hospital.—The old buildings at Sansom and Tenth Streets are being torn down preparatory to the erection of the new Jefferson Hospital building.

Morbidity.—Typhoid fever still claims a large number of victims. For the week ended April 4 there were 184 new cases. There were 48 new cases of diphtheria, 105 of scarlet fever, and 27 of smallpox.

Infectious Diseases.—Typhoid fever still has a large number of victims. To the bureau of health for the week ended April 11, 204 new cases were reported; of diphtheria 50; of scarlet fever 70; and of smallpox 16 new cases.

Personal.—Dr. John Marshall, professor of chemistry in the University of Pennsylvania Medical College and dean for many years, has been granted a leave of absence owing to ill health. It is said that he will soon sail for Europe.——Dr. John I. McKelway, acting chief resident physician of the Philadelphia Hospital, has tendered his resignation, to take effect April 15. He has accepted a position as chief physician of the city hospital at Binghamton, N. Y.

Evans Institute.—At a recent meeting of the directors of the proposed Thomas W. Evans Museum and Dental Institute the city solicitor announced that there is now available, from the estate of Dr. Evans, about $2,500,000 for building and endowment of the institute, which is to be located in West Philadelphia. The will provides that the institution shall give free instruction in dental surgery.

March Temperature.—The month of March was a record breaker as regards temperature in Philadelphia. The mean temperature for the month, 49.4, was 3.2 in excess of that for March, 1902; 8.5 in excess of the normal for the past thirty-two years, and 8 in excess of the previous record, which occurred in 1871. The temperature was as low as the freezing point on but two dates, and the mean temperature was above normal on all but two dates. The total rainfall was 4.38 inches, 1 inch in excess of the normal.

TENNESSEE.

Firm Sued.—Suit for alleged malpractice in an operation and after-treatment has been brought by J. W. Bowden against "Dr. Roland Register & Co.," Memphis, with damages of $10,000.

State Board Commended.—The house committee appointed to investigate the State Board of Health has reported that valuable service has been rendered and that the board has practiced splendid economy. It especially eulogizes the work of the secretary and executive officer, Dr. James A. Albright, and recommends that his salary be increased to $2,000 per annum. It also recommends an appropriation of $5,000 for the "prevention and suppression of human epidemic diseases."

Happel on Ethics.—In his address to the first class of medical students at Vanderbilt University, Nashville, who had completed the four years' course, Dr. T. J. Happel gave much practical advice concerning the ethics of the medical profession. The code of ethics, said he, should be to the student a pillar of cloud by day and a fire by night to guide him aright. He likened the relation of the physician to his patient to that of the priest to his confessor. A physician should at all times be ready to furnish to his brothers all information possible, and magnanimity should characterize his conduct at all times. All physicians except those who have a qualifying adjective before their vocation, may be called in consultation. The practice of advertising with flaming circulars and handbills is to be condemned. A young physician should be cautious in starting his professional career, and should avoid proclaiming from the court house and church that he has come to town, as he understood the place was in need of a live practitioner. He characterized the offering of expert testimony by a physician in court as the most thankless work that can be done by a physician. He gets a paltry sum for this trouble, loses time and money, and draws the ridicule of the opposing counsel. The compensation in such cases should be paid by the state. He urged his hearers to be men as well as physicians, and to make good citizens, not afraid to speak on matters of the day because they are physicians.

WISCONSIN.

Fear Hydrophobia.—On account of threatened hydrophobia, the mayor of Kenosha has ordered the police to kill all dogs found running at large.

Tuberculosis Sanatorium.—Dr. William B. Hopkins, Cumberland, is making arrangements to open a sanatorium for consumptives on the shores of Lake Nebagamon.

Gives House for Hospital.—H. H. Camp, Milwaukee, has deeded his residence to the Children's Hospital Association, and in addition has contributed largely to the endowment fund of the institution.

Women Want Spitting Stopped.—Milwaukee women have sent a petition to the city council requesting an ordinance prohibiting spitting on the floors of street and railway cars, public conveyances and buildings, etc.

Guilty, but Sentence Suspended.—In the case of Dr. B. Fowler Baker, Milwaukee, charged with violating the health laws by not reporting that he was ill with smallpox, was found guilty, but sentence was suspended without payment of costs.

GENERAL.

To Senn Prize Contestants.—Will the author of the article which was offered for the Senn prize of 1901, under the motto "Victrix Fortunae Sapientia," send his name and address to the Editor of THE JOURNAL?

Personal.—Major A. Gregory Hull, chief surgeon of the Soldiers' Home at Leavenworth, Kan., has been appointed chief

surgeon of the new Soldiers' Home Sanitarium at Hot Springs, S D. He will be succeeded by Dr. John L. Fryer, assistant surgeon at Leavenworth.

Fear Plague in Kansas.—A telegram in the daily press states that plague may exist in Rice County, Kansas. A tramp was hired to work with a section gang and is alleged to have been the cause of the death by disease of nine laborers. The possibility of ptomain or other method of poisoning is not mentioned. Dr. Charles Lowry, secretary of the State Board of Health, is said to have gone to Rice County to investigate the matter.

Navy Medical Corps' Increase.—The new law provides for 150 more physicians in the Navy, 25 of whom are to be appointed each year for 6 years. In addition, about 10 vacancies are caused yearly by casualties, retirements, etc., which makes a total of about 35 positions available yearly. The pay is from $1,400 to $2,300 during the first ten years, according to rank. Higher officers receive more. A new officer is first assigned to a naval hospital, of which there are fourteen A course at the medical school follows, taking up work with which a civilian is not so familiar. After this the surgeon is assigned to sea duty. The equipments of hospitals, medical school and of most ships is ample and modern. Further information may be had of the Secretary of the Navy. Entrance requires no political or other influence. Candidates must be physically sound, aged between 21 and 30, and must pass an examination similar to that of a state board. The examiners are in continuous session at Washington, D. C., and Mare Island, Cal.

CANADA.

Montreal Civic Hospitals.—The erection of the new Protestant hospital for contagious diseases in Montreal will soon be started. The plans for the Civic Contagious Diseases Hospital are being prepared. These hospitals will be on similar plans.

Queen's University Medical Convocation was held April 9. The chancellor's prize of $70 was won by Mr A. H. Leonard of Kingston, but as he is unable to hold both it and a hospital house-surgeoncy, the honor passes to G. H. Ward of Napanee. The graduates were laureated by the chancellor and Dr. Herald, secretary of the medical faculty. Mr. J. L. McDowall was the valedictorian.

Suppression of Tuberculosis in Montreal.—The Montreal City Council will aid the recently inaugurated League for the Suppression of Tuberculosis in that city. The hygienic committee has decided to ask all physicians to report every case of consumption in their practices. The city inspectors will then be sent to the residence of the patient with printed instructions. Dr. Laberge, M H. O., intimated that within a short time a special hospital for tuberculosis would be erected either in or near the city.

Personal.—Dr. Augustus Robinson, after half a century's practice and residence at Annapolis, N. S., has decided to remove to the Canadian Northwest, where he intends going into the ranching business.——Dr. Wesley Mills, Montreal, professor of physiology in McGill University, is visiting in British Columbia, and on March 31, addressed the Medical Society of Victoria. The lecturer demonstrated with lantern slides how the more recent methods of studying the anatomic elements of the nervous system had resulted in a great increase of knowledge.

Few Anti-Vaccinationists.—A public meeting was held in Toronto one evening during the past week at which there were no friends of vaccination present. The proceedings began with the introduction of a resolution calling for the repeal of the vaccination act and the abolition of all regulations regarding vaccination as a condition of admission to educational institutions or employment in state departments. It can not be said that the anti-vaccination feeling in Toronto is a strong one, as only 150 people attended the meeting out of a population of a quarter of a million.

Medicolegal Case of Interest in British Columbia.—A charge of drunkenness was made against a Victoria physician who attended a confinement at which the woman died. The counsel for the husband sought a writ of mandamus to compel the College of Physicians and Surgeons of British Columbia to hear and determine a complaint against one of their members. The plaintiff first appealed direct to the medical council, instead of instituting a civil suit, on the ground that while he would not think of accepting any money consideration for the loss of his wife, he believes that the public should be protected from physicians rendered incapable by chronic indulgence in liquor. But the medical council refused to act in the matter, hence the proceedings before the court. Judgment was reserved

The Lady Minto Cottage Hospital Fund.—Addressing a number of business men of Ottawa who were gathered at Government House one day last week, Lady Minto explained what had been accomplished in connection with the cottage hospital fund. About $20,000 had been raised and the districts most in need of hospitals had been assisted. Ten hospitals are now in working order. Four will be opened this spring; and there are now 68 Victorian nurses, of whom some were employed in hospitals and some in district nursing. Lady Minto explained that her object was to raise enough to create an endowment fund of $5000 a year. Dr. Gibson, honorary secretary of the Victorian order, explained that it was the desire of the Countess of Minto to have the endowment fund raised before her departure from Canada. The capital sum aimed at was $123,000; and toward that end a few gentlemen in Montreal had already raised some $36,500. The meeting decided to appoint a committee to begin the work of organization.

FOREIGN.

The German Society of Physicians and Naturalists will hold its seventy-fifth congress at Cassel, September 20 to 26.

The Seventh International Congress of Otology will be held at Bordeaux, April 1 to 4, 1904. Dr. Lermoyez is the secretary-general and can be addressed at Paris, rue la Boetie, 20 bis.

Congress of Sick Benefit Societies.—The second general congress of the "Krankenkassen" of Germany, at Berlin, March 15, was attended by 1,128 delegates, representing 5,300,000 policy holders.

The Dean of the Profession in France.—Dr. David of Montpellier celebrated his 102d birthday February 10. He retired from practice at 98, but still takes his daily stroll and regular meals. He has an especial reputation for the treatment of anthrax, and patients still come from a distance to consult him.

Charlatans in Germany.—Saxony has 945 charlatans to 1,957 regular physicians, and in some towns the former outnumber the latter. One at Leipsic has been fined $75 for advertising and selling several "infallible remedies" at exorbitant prices, proved to be merely a mixture of flours, salt, sugar, etc., or ordinary tea, etc.

Osiris Prize at Paris.—A Paris millionaire has endowed a prize of $20,000 to be awarded every ninth year for some valuable scientific work. The first award has just been made to Dr. Emile Roux, sub-director of the Pasteur Institute, who shares with Behring the honor of the discovery of serum treatment of diphtheria.

Suspension of Botkin's Gazette.—Our Russian exchange, the "Bolnitschnaya Gaseta Botkina," although well in its fourteenth year of publication, announces its impending suspension. This makes the third Russian periodical that has expired this year, the others being the valuable "Russki Arkhiv Pathologie" and the "Vestnik Chirurgii."

Bulletin de l'Institut Pasteur.—Six of the medical men connected with the Paris Institut Pasteur have commenced the publication of a fortnightly periodical. It is intended to be devoted to reviews and abstracts of works on bacteriology, medicine, general biology, biologic chemistry and physiology in their relations with microbiology.

International Health Resort Exposition.—This international exposition is to be held at Vienna September 12 to October 20. Panoramas and views, plastic representations and other interesting details of information in regard to the watering places and health resorts of the world will be exhibited, with displays of the waters, arrangements for sanitation and amusements, etc.

French Physicians Decorated by Emperor William.—The order of the crown, second class, has been conferred on Lannelongue, professor of surgery at Paris, and of the third class on Landouzy, professor of internal medicine The decoration is a token of recognition of their efforts for science in general and in the prophylaxis of tuberculosis in particular. They were delegates to the Berlin Tuberculosis Conference.

Consent in Emergency Operations.—The military medical authorities at St. Petersburg have notified all the surgeons and hospitals under their jurisdiction that in emergency cases, when it is impossible to secure the consent of the unconscious subject and his family live too far away for their consent to be obtained, the official approval of the physicians of the hospital shall be regarded as equivalent to the consent of the interested parties.

Ethics of **Treating the Patient of Another Physician.**—A decision of the Prussian Medical Court of Honor in a recent case proclaimed that every physician is entitled to undertake treatment of all who apply to him in his office hours without regard to whether they have already consulted another physician or not. Also that there is no ground for a general obligation on the part of the physician that he must inform himself in regard to whether a patient applying is already under the treatment of another physician. Only when special circumstances arise that indicate previous application for medical aid, is such inquiry called for. When a physician knows that the applying patient is already in the care of another physician, it is obligatory on him to inform the latter that he has taken charge of the case.

The **Promiscuity of the Madrid Congress.**—The "Semaine Médicale" of Paris has long vehemently protested against the action of the executive committee in charge of the approaching international medical congress, in opening the congress to others besides physicians. "It is not a medical congress," it states, "but a congress of physicians, pharmacists, dentists, veterinarians, midwives, etc., etc" Under these circumstances the "Semaine" announces that, loyal to principle, it will abstain from publishing a report of this congress "for which history will doubtless reserve a blank page." The international congress of the medical press convenes at Madrid two days before the general congress, and the same rulings as to membership have been adopted by the committee in charge. It is open to "journals of medicine, pharmacy, odontology and veterinary surgery." The "Semaine Médicale" also comments with amazement on the fact that the general elections have been appointed for the same week as the congress, by royal decree published March 27. The excitement of a political campaign is not conducive to the success of a scientific gathering.

LONDON LETTER.

Cancer in Ireland.

The increase of cancer in England has been referred to previously in THE JOURNAL. Official figures just published bear out the same alarming result in the case of Ireland. They derive additional interest from the fact that the mode of life in the two countries differs widely. No increase of urban population at the expense of rural, with its associated development of factory life, which, in some indirect fashion, may be supposed to play a part in the increase of cancer, has taken place in Ireland. Since 1864, when the mortality from cancer was 2.7 per 10,000 living, it has steadily risen until 1901, when it reached 6.5. In 1891 it was 4.6 and in 1900 6.1. It varies considerably in the different counties. It is lowest in Kerry (2.54) and highest in Armagh (10.4). In the latter county it is highest in the parts without mountains The registrar-general issued a memorandum asking for particulars of any cases which might throw light on the origin of the disease. Analysis of the replies yields the following results: 1. In many cases cancer occurs in the same family; grandparents, parents and other relatives suffering. 2. Frequently there is also tuberculosis in the family. 3. It has occurred in those who have used tobacco pipes of persons suffering from cancer of the lip. 4. It has occurred amongst different families living in the same house, simultaneously or successively. Some of these facts point to a contagious origin of the disease.

The Antimonial Poisoning Cases.

The trial and conviction of Severino Klosowski, which has just taken place, discloses one of the most remarkable series of cases of poisoning in the annals of crime, which, moreover, presents points of medicolegal interest. The prisoner is a Pole who came to England in 1888. In 1897, having left his wife, he lived at Hastings with another woman. He purchased from a druggist an ounce of tartar emetic. The woman died in 1898. He then lived with another woman, who soon sickened and died. The symptoms appear to have been the same in both cases—persistent vomiting and exhaustion being the predominant ones. But in the one case the physician in attendance certified that death was due to phthisis, in the other to intestinal obstruction. He then lived with another woman, who soon became fatally ill. Fortunately, the physician who attended the last woman was again called in. His suspicions were aroused by the fact that the symptoms resembled those in the previous case, and he insisted on a necropsy being made. Antimonial poisoning was found to be the cause of death. The bodies of the other two women were exhumed and death in their cases was also found to be due to the same cause. Although one body had lain in the grave four years, it was in a remarkable state of preservation—the effects of antimony. The judge commented severely on the failure of the physicians to recognize the illness of the women whom they were attending The only point made by the defense was the absence of motive on the part of the prisoner, for, as he had not married any of the women, he could have got rid of them without killing them. Perverted sexuality seems to be the most plausible explanation.

Rare Form of Deposit (Calcium Carbonate) in Joints.

At the Royal Academy of Medicine in Ireland, Prof. E. H. Bennett showed specimens of a curious deposit he had found in the joints of the body of an aged male used in his class in operative surgery. There was trivial rheumatic arthritis in the joints of the hands and feet, elbows and knees. In the hips, shoulders and sterno-clavicular and tempero-maxillary joints were white markings. There was none in the balls of the great toes, nor any tophi in the pinnæ of the ears. Thus the position of the deposits was the reverse of that seen in gout. The murexid test failed to show the presence of uric acid. Chemical examination showed that the deposit consisted of calcium carbonate, which microscopic examination showed was present in the form of rhombic crystals.

The Physical Condition of School Children.

The physical deterioration of the town population, which ever increases at the expense of the country, has given rise to serious forebodings by those interested in the national welfare. A royal commission, appointed to inquire into the physical training of children in Scotland, has just presented its report. The principle that education should consist in training the body as well as the mind, though acted on in the schools of the upper classes and in the universities, is systematically ignored in the state-provided schools for the mass of the population. The commissioners ask for a more comprehensive conception of school life than prevails, and provision of larger playgrounds and exercise halls. They consider that too many subjects are attempted to be taught and that the children are too closely confined to their books.

The Plague in India.

The plague epidemic throughout India is steadily increasing. The deaths last week numbered 25,882, as against 25,870 for the previous seven days, and 12,695 for the corresponding week last year. In Bombay city there were 716 deaths; in Calcutta, 171; in Karachi, 25, and in Poona about 600. The Bombay presidency reported 10,835 deaths; the Madras presidency, 604; Bengal presidency, 2,941; the United provinces, 2,995; the Punjab, 3,581; the Central provinces, 1,203; the Mysore states, 526; the Hyderabad state, 1,640; Central India, 435; and Kashmir, 1,717. The increase is general, but Poona and some other places seem to suffer out of all proportion to the number of the population. During the past fortnight the death rate in Poona has been about 500 per 1,000 per annum. In Calcutta the rate has never reached 100, while even in Bombay it has not exceeded 150 in any of the outbreaks.

Smallpox in Dublin.

There is a smallpox epidemic raging in Dublin just now; no fewer than 53 cases being under treatment.

Correspondence.

Tropical Medicine.

MINNEAPOLIS, MINN., April 8, 1903.

To the Editor:—I note your suggestions on the study of tropical diseases, and I note Dr. Ashmead's reply to your suggestion in THE JOURNAL of April 4. I fully agree with you that the American Medical Association should give special attention to the study of tropical diseases. I do not believe that the Section on Hygiene and Sanitary Science is in itself the proper place for such subjects. They should be studied from the broader field of general medicine. At the same time, the sanitary feature should not be lost sight of, and if a joint meeting could be given by Sections on Medicine and Sanitary Science it would seem that the greatest amount of good might thus be accomplished. You will note that these two sections have arranged for one day's work in joint meeting this year, and we have arranged a program covering diseases that partly, at least, would be looked on as tropical, viz., yellow fever, plague, malaria and typhoid fever. I note that the Section on Medicine is also to have a very thorough discussion of dysentery. I believe that these subjects (communicable dis-

eases) should be studied first in joint meeting. To try to consider them from the sanitary side alone is a mistake. Sanitarians should be in the medical section largely and should be working from that point of view, so far as the American Medical Association is concerned in dealing with these diseases. It would seem to me that a committee might be formed from these two sections to look into this matter of a joint meeting during one day at least of this session of the Association each year. If it appears that the Section on Medicine is too heavily loaded already, then I would certainly feel that there should be a subsection under medicine to have charge of these matters.

I am rather inclined to think that the American Medical Association would get the greatest amount of good out of the Section on Hygiene and Sanitary Science if it were a subsection of medicine. Very truly,

H. M. BRACKEN.

Osteopathy and Legislation.

NEW YORK, April 10, 1903.

To the Editor:—My recent letter to THE JOURNAL on this subject has brought a number of letters from physicians who have been interested in the matter, and I have received voluminous literature in the way of arguments. Right here lies the weak point in our opposition. Arguments on both sides have been so extensive that they have sometimes become top heavy and have fallen by their own weight, toppling occasionally in the wrong direction. A very able lawyer who presented the interests of the osteopaths before one legislative committee told me afterward that he had no fear of the physicians or of their lawyers, but when he saw the osteopaths slip up on making a demonstration when opportunity was given them to move a few bones, he at once lost faith in his clients and would have nothing more to do with them. He told me that he had taken up their cause in perfectly good faith, and was convinced that he was to be a public benefactor.

If members of a legislative committee object to having specimens from human cadavers placed on the table before them the fresh rack of a sheep will always suffice. The fraudulent nature of the claims of the osteopaths will be so apparent to any laymen when the osteopaths are asked to "show the gentlemen" how they move bones, that the elaborate and convincing arguments on both sides can be dispensed with.

58 West 56th Street. ROBERT T. MORRIS.

Catgut Preparation.

BANGOR, ME., April 4, 1903.

To the Editor:—As soon as Claudius' method of preparing catgut appeared I carefully prepared some imported gut, Nos. 0, 1 and 2. On trial the gut was brittle and absolutely worthless. The solution is also offensive and black. The same lot of gut was prepared by Hofmeister's method, and is as good as gut can be. The solution is clear and sparkling, and the gut can be boiled without injury. It lasts too long in the tissues, which is a good fault and can be remedied by using the smaller sizes WALTER L. HUNT, M.D.,

Visiting surgeon E. M. G. Hospital.

Light on Lupus.

CINCINNATI, April 13, 1903.

To the Editor:—In your issue of April 11 there appeared an article on "Light in the Treatment of Lupus and Other Chronic Skin Affections," to which I wish to offer the following criticism, in order to correct some possible mistaken impressions, and any resulting deleterious influences: The four cases of lupus, reported cured by this method, bear no resemblance to lupus, either from the appearance of the pictures or from the clinical history. The process not only began too late in life, in adults from 21 to 52 years of age, but also pursued an entirely too rapid course, two weeks to one year in each individual case.

M. L. HEIDINGSFELD.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

FETAL MORPHIN ADDICTION.

COLORADO, April 10, 1903.

To the Editor:—Concerning a very peculiar case in my regular work I wish a little information: April 3 I delivered a multipara of a nine pound boy. The mother had been addicted to the use of morphin for the past three years. The child appeared to be healthy and perfect in every respect with excretions normal. On the second day it began to cry, and cried continuously for two days and nights despite the free use of paregoric. At the end of that time the baby had become so weak that I saw no hope for it, but gave 1/120 gr. of morphin and got an immediate quieting effect. The baby is now eight days old and by the use of 1/120 gr. of morphin every other day it has begun to gain weight and strength, but if one dose of morphin is omitted it is immediately attacked with a crying spell and will not stop until it gets its morphin.

Now I would like to know if it is possible for a fetus to contract the morphin habit, and if there is any other similar case on record. O. D.

ANS.—The case is not an extraordinarily unusual one, as the infant is often affected by the habits of the mother. The child should not be allowed to grow up a morphin habitué, and we advise discontinuing the opiate, carefully studying the symptoms and directing treatment thereto.

LANGENBECK'S TRIANGLE.

WASHINGTON, D. C., April 10, 1903.

To the Editor:—Please inform me where and what is "Langenbeck's triangle." R. S. PORTER, M.D.

ANS.—It is an isosceles triangle, of which the apex corresponds to the anterior superior iliac spine, the base to the anatomic neck of the femur and the external side to the external face of the great trochanter. Penetrating wounds within this triangle may be intra-articular.

State Boards of Registration.

Amended Nebraska Law.—The medical practice law of Nebraska has been amended by the legislature at its late session so as to make an examination, successfully passed, an essential before obtaining a license. The amended sections of the law now read:

Section 19.—Every holder of a diploma from a recognized medical college within the state of Nebraska, making application for an examination and a certificate under the provisions of this act, shall pay to the board of secretaries prior to his examination the sum of ten dollars ($10.00). All other persons making such application shall pay to said board the sum of twenty-five dollars ($25.00). All such fees shall be equally divided among the four secretaries of the board as full compensation for their services and expenses. For the taking of any testimony each of the secretaries shall be entitled to charge and receive such fees as are provided for notaries public for similar services. No part of such fees shall be paid out of the state treasury.

Section 7. It shall be unlawful for any person to practice medicine, surgery or obstetrics or any of the branches thereof, in this state, without first having applied for and obtained from the state board of health a license so to do. Application therefor shall be in writing, and shall be accompanied by the examination fees hereinafter specified and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in any or all their branches shall be accompanied by proof that the applicant is a graduate of a medical school or college in good standing, as defined in Section eight (8) of this Article. When the application aforesaid has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination at the time and place mentioned in such notice. Examinations may be made wholly or in part in writing by the board and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in any or all their branches shall embrace those subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. All examinations provided for in this act shall be conducted under rules and regulations prescribed by the board, which shall provide for a fair and wholly impartial method of examination. It is also provided that examinations on practice of medicine and therapeutics shall be conducted by the member or members of the board of secretaries who are of the same school of medicine as the applicant. And it is further provided, that the said state board of health may, at their discretion, admit, without examination, legally qualified medical practitioners, who hold certificates to practice medicine in any state with equal requirement to those of the state of Nebraska.

Section 10. If upon investigation of the proofs submitted to the board, and after the examination, as hereinbefore provided, the applicant shall be found entitled to practice, there shall be issued to said applicant the certificate of said board under its seal and

signed by its secretaries stating such fact, and it shall be the duty of the applicant before practicing to file such certificate or a copy thereof in the office of the county clerk of the county in which he or she resides or in which he or she intends to practice; such certificate or copy shall be filed by the county clerk and by him recorded in a book kept for that purpose, properly indexed, to be called the "Physicians' Register," and for such services the county clerk shall receive from the applicant the same fees as are allowed to the register of deeds for the recording of conveyances.

Montana Report.—Dr. W. C. Riddell, secretary of the board of Medical Examiners of Montana, reports the examination held at Helena, April 7 and 8, as follows: Number of subjects examined in, 10; total number of questions, 50; percentage required to pass, 75; written examination; total number examined, 25; passed, 17; failed, 8.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
12	H.	Chicago Homeopathic College.....	1901	80.2
9	R.	College of Phys. and Surgs., Chicago.	1902	76.5
15	R.	College of Phys. and Surgs., Chicago.	1902	75.2
5	R.	Coll. of Phys. and Surgs., Milwaukee	1900	84.2
2	R.	Harvard Medical School.....	1902	82.1
3	H.	Hahnemann Medical College, Phila..	1899	79.9
11	R.	Laval University	1884	75.1
7	R.	McGill University, Montreal.....	1902	75.1
13	R.	McGill University	1895	82.9
8	R.	Northwestern University, Chicago...	1897	75.3
1	R.	Northwestern University, Chicago...	1875	75.1
6	R.	Rush Medical College, Chicago.....	1900	76.8
16	R.	Rush Medical College, Chicago.....	1902	81.1
14	R.	Rush Medical College, Chicago.....	1901	76.3
4	R.	University of Minnesota.....	1900	82.5
17	R.	University of Michigan.....	1886	85.1
10	R.	Vanderbilt University, Nashville....	1899	80.1

FAILED.

20	H.	Boston University	1898	67.4
24	R.	College of Phys. and Surgs., Keokuk.	1875	22.6
22	R.	Coll. of Phys. and Surgs., Kan. City.	1902	47.3
27	E.	Eclectic Medical College of Maine...	1883	*
18	H.	Hahnemann Medical College, Chicago	1883	31.7
21	H.	Hahnemann Med. Coll., Kansas City.	1899	58.2
25	R.	University Med. Coll., Kansas City..	1900	46.1
23	R.	University of Michigan.....	1891	50.4
19	R.	Vanderbilt University	1893	56.8

* Refused license because diploma is not recognized by this board. This college was organized in 1881 and its charter was revoked in 1887.

The board resolved to discontinue issuing temporary licenses, and not to reciprocate with any other state before the next meeting, Oct. 6, 1903.

New Jersey Improvements.—The State Board of Medical Examiners of New Jersey has secured amendments to the medical practice act of that state by which the academic standards for admission to the state examinations have been raised from a competent common school education to a diploma issued after four years of study in a normal, manual training or high school of the first grade in that state, or its equivalent. The medical requirements have been increased from three to four courses of medical lectures of at least seven months each, in different calendar years, prior to receiving the degree of doctor of medicine. The amendments go into effect July 4, 1903. After that date candidates for examination or for the endorsement of a license issued by a recognized examining board of another state, will be obliged to comply with the new standard of requirements for a New Jersey license.

Marriages.

JOHN F. SLOAN, M.D., Peoria, Ill., to Miss Mamie McDonough, at Chicago, April 4.

WESLEY T. MULLIGAN, M.D., to Miss Sallie Macy Brewster, both of Rochester, N. Y., April 1.

NICHOLAS IVANOVITCH ARDAN, M.D., to Miss Minnie Cabel Roberts, both of Richmond, Va., April 2.

WILLIAM CHAMPION DEMING, M.D., to Miss Imogen Hawthorne, both of New York City, April 15.

WILLIAM E. VADEN, M.D., Rich Creek, Tenn., to Miss Katherine Louise Cathey of Verona, Tenn., March 18.

Deaths.

George **Anthony Collamore, M.D.** Harvard University Medical School, Boston, 1859, one of the oldest, most successful and most prominent physicians of Toledo; a member of the American Medical Association; a charter member of the Toledo Medical Society and several times its president and secretary; secretary of the Ohio State Medical Society from 1882 to 1891, and for the following two years its president; major-surgeon of the One Hundredth Ohio Volunteer Infantry during the Civil War; from 1872 to 1876 coroner of Lucas County; health officer of Toledo in 1876, and from 1887 to 1891, died at his home in Toledo, April 8, from paralysis after an illness of ten days, aged 69.

Albert George Edwards, M.D. Missouri Medical College, St. Louis, 1859, University Medical College, Kansas City, Mo., 1892, formerly president of the Northern Kansas and Marshall County Medical societies, and of the Society of Surgeons of the St. Joseph and Grand Island Railway; member of the American Association of Railway Surgeons; a practitioner of Marysville, Kan., for more than forty years, and a veteran of the Civil War, died suddenly from heart disease at Perry, Okla., April 1, aged 65.

Hiram S. Roberts, M.D. Jefferson Medical College, Philadelphia, 1866; hospital steward of the Eighty-third Illinois Volunteer Infantry in the Civil War; for nearly forty years a practitioner of Manhattan, Kan.; some time president of the Kansas Medical Society, and member of the State Board of Health; formerly surgeon-general K. N. G., died at his home in Manhattan, April 1, from pneumonia, after an illness of ten days, aged 62.

Joseph Stanford Ames, M.D. Berkshire Medical College, Pittsfield, Mass., 1858, died, April 1, from mitral disease at his home in Holden, Mass. He had been a member of the Massachusetts Medical Society since 1860 and had been in active practice in Holden, Mass., for 44 years.

Sheldon Stringer, M.D. Tulane University, New Orleans, 1859, surgeon in the Confederate service during the Civil War; a member of the American Medical Association; member and ex-president Florida State Medical Association, died at his home in Brooksville, Fla., April 7.

John E. Sanborn, M.D. Harvard University Medical School, Boston, 1850, surgeon of the Twenty-Seventh Iowa Volunteer Infantry during the Civil War, mustered out as surgeon-in-chief of the Sixteenth Army Corps, died at his home in Melrose, Mass., April 1, aged 79.

William C. Fritz, M.D. University of Buffalo, 1892, a member of the American Medical Association, who had suffered for four or five years from heart disease, died suddenly in the home of a patient in Buffalo, N. Y., March 31, aged 36.

Charles Lawrence Siegel, M.D. Medical College of Virginia, Richmond, 1891, died at the home of his mother, near Richmond, Va., April 4, from tuberculosis of the throat, after an illness of two years, aged 33.

Joseph F. Harrell, M.D. Castleton (Vt.) Medical College, 1855, a member of the Medical Society of the State of North Carolina, died at his home in Whiteville, N. C., March 31, aged 70.

William B. Town, M.D., one of the oldest practitioners of Lenawee County, Mich., died at his home in Geneva, April 1, after an illness of several years, from dropsy and heart disease.

August Negendank, M.D. Philadelphia College of Medicine and Surgery, 1854, died at his home in Wilmington, Del., from paralysis, March 31, after an illness of three days, aged 79.

Edgar Perry, M.D. Harvard University Medical School, 1898, a member of the Massachusetts Medical Society, died at his home in Boston from paralysis, April 8, aged 48.

J. H. Bryant, M.D., formerly a resident of St. Paul, Minn., died at his home in Los Angeles, April 5, from cerebral embolism, after an illness of five days, aged 69.

E. H. Williams, M.D. Medical College of the State of South Carolina, Charleston, 1879, died at his home in Walterboro, S. C., March 31, from apoplexy, aged 45.

Reinhard H. Weber, M.D. Jefferson Medical College, Philadelphia, 1866, died suddenly from apoplexy at his home in Philadelphia, March 30, aged 59.

Russell P. Fay, M.D. New York Homeopathic Medical College and Hospital, 1887, died at his home in Yonkers, N. Y., from pneumonia, March 30, aged 39.

E. Darwin Ayres, M.D. New York University, 1852, died at his home in Little Rock, Ark., April 8, from paralysis, after an illness of five days.

Alfred L. Murtha, M.D. Baltimore University School of Medicine, 1901, died at his home in Brooklyn, N. Y., from pneumonia, March 22, aged 25.

I. H. Hand, M.D. Reform Medical College of Georgia, Macon, 1851, died at his home in Leary, Ga., March 22, from heart disease, aged 80.

William G. Allen, M.D. Albany (N. Y.) Medical College, 1857, died at his home in Mansfield, Mass., April 5, after a long illness, aged 69.

A. G. North, M.D. Atlanta (Ga.) Medical College, 1879, aged 47, was struck by a train at Hampton, Ga., March 29, and instantly killed.

William D. Hutchings, M.D. Indiana Central Medical College, Indianapolis, 1851, died suddenly at his home in Madison, Ind., April 3.

John Maclay, M.D. Jefferson Medical College, Philadelphia, 1882, died suddenly at his home in Richmond, Kan., April 5, aged 55.

J. L. Rowland, M.D., a surgeon on the Federal side in the Civil War, died suddenly at Salyersville, Ky., April 4.

John W. Hodgkinson, M.D., formerly a well-known physician of Toronto, died in that city January 29, aged 78.

John A. Edmiston, M.D. Rush Medical College, Chicago, 1866, died at his home in Clinton, Ill., April 5.

Stephen R. Gray, M.D., died recently at his home in Lansingburg (Troy), N. Y.

Deaths Abroad.

Francesco Randacio, M.D., professor of normal human anatomy in the University of Palermo, Sicily, died from cerebral hemorrhage, February 23, aged 81. He was graduated from the University of Turin in 1853, and two years later began his life work as a teacher of anatomy. He rendered inestimable service to the city of Palermo during the cholera epidemic of 1866 and 1867, at which time he was sanitary director of the city. In appreciation of his work, he was given a silver medal by the municipal authorities.

Miscellany.

Books Without Indices.—A writer in the "New York Medical Journal" expresses "grievous disappointment" over a text-book which "has not even the pretense of an index." He considers that it is "an imposition on an unsuspecting purchaser to offer for sale a scientific work which has absolutely no index at all." He is right.

Exploration Justified.—Let us put this question to the practitioner of medicine: Can you cure a case of cancer of the stomach? If not, why withhold the only known means of effecting such a cure—a surgical operation? Again, let us ask, can you diagnose a case of cancer of the stomach early enough for surgical relief? If not, why withhold an exploration, the only certain means of diagnosis.—W. J. Mayo.

Association News.

THE NEW ORLEANS SESSION.

QUOTATIONS FROM OTHER JOURNALS CONCERNING THE PROSPECTS FOR A GOOD MEETING.

The "Fort Wayne Medical Journal-Magazine" says: "The coming session of the American Medical Association should be, and we believe will be, one of the largest in the history of the organization. There are many reasons why this should be so. . . . New Orleans is the metropolis of the south, and contains many things of more than usual interest. The time of the session is the most pleasant of the year. To the northern contingent especially, the prospect of warm sunshine, balmy air, fragrant flowers and green leaves after a winter of more than usual vigor, accompanied by a scarcity of fuel, will be unusually pleasing. That the session is to be held in the south, the hospitality of whose people is proverbial, is a sufficient guarantee that the social features will equal, if not surpass, those of previous sessions."

The "New Orleans Medical and Surgical Journal" says: "From all accounts, the New Orleans session promises to be well attended, and from no section more than the south should this be true. For the future of local organization, for the future of protection against the enemies of an ideal profession, the medical men of the south should come and drink deeply of the spirit which is always a part of such a crystallization of science and advancement as the national body represents. New Orleans is ready to receive all that come, and if those from far away find us lacking in some things, we will have a warm enough heart to make compensation in others. The Arrangements Committee have made such preparations as their inexperience will have permitted, and the 'Journal,' for them, for the citizens of New Orleans and for the medical profession of the city and state, bids every medical man and member of the American Medical Association welcome."

The "New York Medical Journal" says: "The attractions of New Orleans as a place of meeting warrant most amply the presumption that the assembly to be held there in May will be largely attended. The work of the sections, therefore, it may be assumed, will be quite up to the standard that their previous labors at large sessions have set. The orators who have been chosen to deliver formal addresses before the Association at large are men to whom their professional brethren always listen with pleasure and profit." The editor says, further, that, from the scientific aspect, "there need be no doubt of the entire success of the occasion."

RAILROAD RATES.

ADDITIONAL ANNOUNCEMENTS CONCERNING RATES, ROUTES AND SPECIAL TRAINS.

The "Medical Limited."

Confirming the preliminary announcement in the New Orleans Number of THE JOURNAL: The Chicago Medical Society has chartered a special train to New Orleans over the Illinois Central Railroad, to leave Sunday, May 3, at 11 a. m., and to arrive in New Orleans the following morning. The rate, as we have announced, will be one fare for the round trip, $23. Particulars as to extension of tickets to May 30 were given in THE JOURNAL of last week. Reservations may be made by addressing the Secretary, Dr. Frank X. Walls, Room 910, 103 State St., Chicago. Reservations for all other Illinois Central trains should be made at 99 Adams St., Chicago. The same rate and time limit applies to all trains from Chicago.

Excursion to Cuba.

Further announcement of the Cuba excursion states that physicians and members of their parties will not be subjected to quarantine regulations on their return from Cuba, but if it is deemed necessary by the resident physician, the baggage will be inspected and disinfected. A rate of $50 for the round trip is granted by the Southern Pacific Company to physicians and their families and it is not necessary that any certain number go to secure this rate. The capacity of the ship is limited. The vessel is scheduled to leave new Orleans for Havana every Saturday at noon, returning, it leaves Havana Tuesday and arrives in New Orleans Thursday.

Mississippi River Excursions.

Further particulars from members who have endeavored to arrange a Mississippi River excursion indicate that from the vicinity of Philadelphia, no arrangement has yet been made.

To New Orleans by Sea.

Another route to New Orleans, part by sea and part by rail, is announced as follows: From New York to Savanah via the Ocean Steamship Company, then by rail to New Orleans and returning by the same route; $35.00 for the round trip, on steamers leaving New York, April 28 and 30 and May 2, the limit of return being May 14. Tickets may be extended to the final date of May 30, by arrangement with Mr. Joseph Richardson, 204 Camp St., New Orleans, exactly as already described for the other railroad rates and detailed in THE JOURNAL last week. This rate includes meals and stateroom while on the steamer. Passengers may be accommodated from Boston and New England by a steamship of this same company from Boston to New York, at which latter city a change of boats will be necessary. Particulars may be had of the Ocean Steamship Company by addressing Mr. E. H. Downing, 20 Atlantic Ave., Boston, or W. C. Becker, C. P. T. A., 317 Broadway, New York.

Judicial Council.

One of the parlors of the New St. Charles Hotel has been reserved for the meeting of the Judicial Council.

To Visit Lepers' Home.

An invitation has been extended to members of the American Medical Association by the board of control of the Leper Home near New Orleans to inspect the arrangements for segregation and care of lepers.

Halls and Meeting Places.

The Section on Ophthalmology will have a separate room for an exhibit of specimens and another for a commercial exhibit of instruments. These will be in the College of Pharmacy, where the meetings of the section will be held

Eight stereopticons will be used at the different section meetings.

Names of New Orleans Visitors Wanted.

Dr. Isadore Dyer, 124 Baronne street, New Orleans, chairman of the Committee of Arrangements, is anxious to hear from those expecting to attend the session, as to name, whether accompanied by ladies and how many, in what section the one reporting intends to register, and whether rooms have been engaged, and, if so, where.

Louisiana State Meeting Gets Rates.

A rate of one fare for the round trip has been granted by the Southeastern Passenger Association and by the Southern Pacific Railroad to the meeting of the Louisiana State Medical Society. The tickets will be on sale beginning April 27, and will extend over the American Medical Association session, being good till May 30 if specially extended at 204 Camp Street, New Orleans, as described in THE JOURNAL, April 11, p. 1004.

Smoker for Surgeons.

Instead of the usual annual banquet of the Section on Surgery an informal smoker will be given Tuesday evening, May 5, at the clubhouse of the Young Men's Gymnastic Association and under the auspices of the club. It is the wish of the local fraternity that every member of the Association who is specially interested in the Section on Surgery come to New Orleans for the first day of the meeting and attend this smoker, where it is hoped that the members may become more intimately acquainted. A unique and pleasing vaudeville entertainment will be given, and the privileges of this excellent clubhouse will be extended to the members of the Section. The local surgeons expressed a wish to make this their affair, but this being contrary to the established precedent of the Association, they are content to see that everyone who attends has ten dollars' worth of fun for two dollars.

Medical Organization.

Florida Adopts Association Plan in Full.

ST. AUGUSTINE, FLA., April 10, 1903.

At its annual meeting, held at Tampa in 1902, the Florida Medical Association, by formal resolution, committed itself to the plan of reorganization of the American Medical Association in general terms, but, as the constitution and by-laws for state societies had not then been completed and published, no attempt was made to put it in operation during the year.

At its meeting held at St. Augustine, April 8 to 10, 1903, the constitution and by-laws were adopted in full, after extended consideration and discussion, both in committee and before the whole association, as it was believed that the plan in its entirety could be adapted easily to conditions in Florida.

An exceptionally strong council was selected to serve for one year, or until the House of Delegates for next year could take action, consisting of the following members: First District, Dr. J. Harris Pierpont, Pensacola; Second District, Dr. Henry E. Palmer, Tallahassee; Third District, Dr. William R. Chalker, Lake City; Fourth District, Dr. William L. Hughlett, Cocoa; Fifth District, Dr Jay H. Durkee, Jacksonville; Sixth District, Dr. James H. Hodges, Gainesville; Seventh District, Dr. Joseph N. Fogerty, Key West; state at large, Dr. Richard P. Daniel, Jacksonville.

The council organized immediately with Dr. J. Harris Pierpont the retiring president, who has taken a very active and intelligent interest in the work of organization, as chairman, and Dr. Joseph N. Fogerty, secretary. The state was divided into convenient councilor districts, and an active plan of campaign mapped out.

The officers of the association are: president, Dr. De Witt Webb, St. Augustine; vice-presidents, Drs. Johns Mac Diarmid, De Land, and Joseph N. Fogerty, Key West; secretary and treasurer, Dr. J. D Fernandez, Jacksonville, and librarian, Dr. Edward N. Liell, Jacksonville.

Florida has been one of the dormant states in the past, practically without medical legislation, or the unity of purpose necessary for this or any other reform; but in no other state visited have I met a more active, alert and progressive membership, mostly young men, and it is confidently predicted that they will give such an account of themselves, as they promised to do, as will place their state in the first rank of an organized profession (Signed) J. N. MCCORMACK.

Trimble County (Ky.) Medical Society.

This society was organized last week with Dr. Jesse C. Hancock, Bedford, president, and Dr. Louis G. Contri, Winona, vice-president.

Washington County (Ky.) Medical Society.

The physicians of this county met last week and with the aid of Dr. Robert C McChord, Lebanon, organized a county society, with Dr. Daniel O. Polin, president, and Dr. J. H. Lampton, secretary, both of Springfield.

Dickson County (Tenn.) Medical Society.

The physicians of the county met at Dickson, March 30, and organized a county society on the lines suggested by the American Medical Association. Dr. William S. Scott was elected president; Dr. W. W. Walker, secretary, and Dr Edward Ridings, delegate to the state society, all of Dickson.

Gallatin County (Ky.) Medical Society.

This society was organized recently with the aid of Dr. Louis Frank, Louisville, councilor for the Fifth District, with Dr. H. S. Rowlett, Warsaw, president; Dr. E. E. Bickers, Sparta, vice-president, and Dr. James M. Stallard, Sparta, secretary-treasurer.

Oldham County (Ky.) Medical Society.

This society was organized with the aid of Dr. Louis Frank, Louisville, councilor for the Fifth District, with the following officers: Dr. Alonzo M. Morrison, Goshen, president; Dr. Richard B. Cassady, La Grange, vice-president; Dr. George P. Boone, Beard, secretary and treasurer, and Dr. John H. Speer, Brownsborough, delegate.

Barren County (Ky.) Medical Society.

Dr. Arthur T. McCormack met the physicians of Barren County at Glasgow, April 12, and organized a county society, with an initial membership of 14 and a promise of at least 10 more. Dr. S. T Purcell was elected president; Dr. Joseph S. Leech, vice-president; Dr. Richard E. Garnett, secretary-treasurer, and Dr. Samuel T. Botts, delegate, all of Glasgow. Drs. William T. Britt, Temple Hill, and Flavius J. Taylor and A. Mazetta Rowe, Glasgow, were elected censors.

Marshall County (Ky.) Medical Society.

The physicians of Marshall County met at Benton, March 25, and organized a county society, adopting the constitution and by-laws prepared by the American Medical Association without change. Dr. William S. Stone, Birmingham, was elected president; Dr. E. G. Thomas, Harvey, vice-president, and Dr. Van A. Stilley, Benton, secretary and treasurer. The belief is expressed that every registered physician in the county will become a member before the meeting of the state association.

Fulton County (Ky.) Medical Society.

The physicians of Fulton County held a meeting at Fulton, April 3, to consider county organization. After an address by the president of the state association, Dr. W. W. Richmond, Clinton, a society was formed, and the constitution and by-laws formulated by the American Medical Association were adopted

without alteration, and the fifteen members present paid their membership dues to the state association in advance. Dr. William W. Gourley, Fulton, was elected president; Dr. Hugh L. Prather, Hickman, vice-president; Dr. Seldon Cohn, Fulton, secretary and treasurer; Dr. John C. Yates, Fulton, delegate to the state association, and Dr. J. M. Hubbard, Hickman, alternate.

Arkansas.

This was one of the early states to adopt the complete association plan, and Drs. Shinault and Runyan, respectively president and secretary, supported by a strong council, have worked constantly and faithfully to give the profession and people all the benefits possible from the reorganization. In about eleven months the number of county societies has increased from 25 to 65, with the prospects good for organizing several more; the membership of the state association has increased from 300 to about 800, and new members are coming in regularly. As there are but 2,573 physicians in the state, of all kinds and schools, it is doubtful whether better results have been secured by any other association.

California.

This state also adopted the association plan in 1902, and began active work under the leadership of Drs. Dawson and Evans, president and secretary, and an able board of trustees, with functions similar to the council in other states. County societies have been rapidly organized in every section of the state, and much interest is manifested. As an evidence of how general this is, in a little more than eleven months the membership in the state society has increased from a little over 300 to 1,075, and this total is being constantly increased. The Journal of the State Society has been an important and interesting feature of the work in California, and it is doubted if the success attained would have been possible without its influence.

Other States.

Alabama, Massachusetts, Pennsylvania, Connecticut and Indiana have all long had plans of organization similar to that of the association, with permanent good results, which are so generally understood as to make a detailed discussion of them unnecessary. For instance, over 1,200 of the 1,700 practicing physicians of Alabama are permanent members of their system of county and state associations, and the profession has so long been a recognized factor in legislative and public affairs that its right and duty to be consulted and to speak when matters relating to the public health and medical legislation are being considered is never seriously questioned.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL SESSION, NEW ORLEANS, MAY 5-8.

Medical Association of the State of Alabama, Talladega, April 21.
Medical Society of the State of California, Santa Barbara, April 21.
Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
Kentucky State Medical Society, Louisville, April 22-24, 1903.
Texas State Medical Association, San Antonio, April 28.
Louisiana State Medical Society, New Orleans, April 28-30.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
Nebraska State Medical Society, Lincoln, April 28-30.
Illinois State Medical Society, Chicago, April 29-May 2.
Arkansas Medical Society, Jonesboro, April 30-May 2.
Association of American Medical Colleges, New Orleans, May 4.
American Proctologic Society, New Orleans, May 5.
Kansas Medical Society, Concordia, May 6-9.
American Academy of Medicine, Washington, D. C., May 11-12.
American Therapeutic Society, Washington, D. C., May 11-13.
Oklahoma Territorial Medical Association, Guthrie, May 12.
American Association of Genito-Urinary Surgeons, Washington, D. C., May 12-14.
American Surgical Association, Washington, D. C., May 12-14.
American Orthopedic Association, Washington, D. C., May 12-14.
American Pediatric Society, Washington, D. C., May 12-14.
Association of American Physicians, Washington, D. C., May 12-14.
American Medico-Psychological Association, Washington, D. C., May 12-15.
American Ophthalmological Association, Washington, D. C., May 13-14.
Association of Military Surgeons of the United States, Boston, May 19-21.
New Hampshire Medical Society, Concord, May 21-22.
North Dakota State Medical Society, Bismarck, May 21-[illegible].
South Dakota State Medical Society, Mitchell, May 27-[illegible].
Connecticut Medical Society, Hartford, May 27-28.

Central Ontario Medical Association.—At the annual meeting held recently at Peterboro, Dr. Robert P. Boucher, Peterboro, was elected president.

McLean County (Ill.) Medical Society.—The annual election of officers was held at Bloomington, April 2. Dr. Franklin C. Vandervort was elected president; Dr. Asa L. Fox, vice-president, and Dr. Albert F. Kaeser, secretary and treasurer, all of Bloomington.

Otoe County (Neb.) Medical Society.—The physicians of Otoe County met at Nebraska City, April 2, and reorganized this society, with Dr. Claude Watson, Nebraska City, president; M. M. McVean, vice-president, and Charles P. Crudup, Nebraska City, secretary-treasurer.

Chicago Urological Society.—This society was organized April 10, with the following officers: President, Dr. William T. Belfield; vice-president, Dr. Louis E. Schmidt, and secretary-treasurer, Dr. R. R. Campbell. Meetings will be held the last Thursday in each month excepting June, July, August and September.

Saratoga County (N. Y.) Medical Association.—The annual meeting was held at Ballston Spa, March 3. Dr. Miles E. Varney, Saratoga Springs, was elected president; Dr. Arthur W. Johnson, Mechanicsville, vice-president; Dr. James T. Sweetman, Jr., Ballston Spa, secretary, and Dr. William E. Swan, Saratoga Springs, treasurer.

Woman's Medical Association.—An association of women physicians was organized in San Francisco, March 28, for a closer association of the members in their professional efforts and interests; to establish friendly intercourse among them; to afford opportunities for scientific discussion, and to promote the general advancement of women in medicine and surgery.

Rhode Island Medical Society.—At the quarterly meeting, March 5, the following officers were elected for the year following the annual meeting in June: President, Dr. William R. White, Providence; vice-presidents, Drs. Christopher F. Barker, Newport, and Dr. Charles V. Chapin, Providence; recording secretary, Dr. Stephen A. Welch, Providence; corresponding secretary, Dr. Herbert Terry, Providence, and treasurer, Dr. George S. Mathews, Providence.

New York State Medical Association, Fifth District Branch.—The president, Dr. Parker Syms, New York City, has just issued a circular letter to the members, calling for their co-operation in promoting the growth of the association, and stating that, as there is now no prospect of union of the two state organizations, "the only way the medical profession of the State of New York can become united is through membership in the New York State Medical Association and in the American Medical Association," . . . and that "the New York State Medical Association is the only representative in this state of the American Medical Association, and it is only by becoming a member of the local and state organization that one can be eligible for membership in the national body."

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Feb. 3, 1903.

The President, Geo. B. Pacherd, in the Chair.

SYMPOSIUM.

CRIMINAL ABORTION.

The Colorado Law on Abortion.

ALLEN H. SEAMAN, Esq., said in part, on the subject of "Colorado Laws Relating to Criminal Abortion":

Colorado laws relating to the abortionist and to the victim are exceedingly simple, and fraught with little difficulty in construction. There may be said to be none directly affecting the victim.

With reference to the abortionist, the law is embodied in the following words:

Every person who shall, wilfully and maliciously, administer, or cause to be administered, to, or taken by, any person, any poison or other noxious or destructive substance or liquid, with the intention to cause the death of such person, and being thereof duly convicted, shall be punished by confinement in the penitentiary for a term not less than one year, and not more than ten years and every person who shall administer, or cause to be administered, or

taken any such poison, substance or liquid, or who shall use, or cause to be used, any instrument of whatsoever kind, with the intention to procure the miscarriage of any woman then being with child, and shall thereof be duly convicted, shall be imprisoned for a term not exceeding three years in the penitentiary, and fined in a sum not exceeding one thousand dollars; and if any woman by reason of such treatment shall die, the person or persons administering or causing to be administered such poison, substance or liquid, or using or causing to be used any instrument as aforesaid, shall be deemed guilty of murder, and if convicted, be punished accordingly, unless it appear that such miscarriage was procured or attempted by or under advice of a physician or surgeon with intent to save the life of such woman or to prevent serious and permanent bodily injury to her. (Mills' Anno. Stat., vol. v, Sec. 1209.)

There are also minor statutes relating to the matter. It is made an offense for any person to advertise or publicly expose for sale any drugs designed for the use of females for the purpose of producing an abortion. There is a statute containing a prohibition against the publication or circulation of any newspaper or book containing receipts or prescriptions immoral in tendency, or receipts or prescriptions for compounds designed to or tending to produce miscarriage or abortion.

By the "attending physician after" is meant a physician called to attend the patient after an abortion has been produced or attempted to be produced, either by the patient or some other person. Of course, it goes without saying that there is no law which in any way affects the attending physician in cases of this kind, when the same duties and obligations rest on him as where the patient is suffering from any other disease or injury.

PROTECTION OF THE PHYSICIAN.

There are, however, as affecting the physician, some matters to which it is proper to refer

First. Self protection demands that in a case of this kind the physician or surgeon, as soon as he discovers the difficulty, should have in consultation some other reputable physician. He must anticipate that the matter may be the subject of comment and criticism, and may become the subject of investigation in the courts, and he is in a much better position if he has for corroboration and support the advice and services of another reputable practitioner.

Second. Matters of this kind are frequently the subject of judicial investigation, as a result of either civil suits or criminal prosecutions, and the testimony and statements of such attending physician becomes of the greatest importance. Here the law furnishes a guide. Our statute provides as follows:

. . . A physician or surgeon, duly authorized to practice his profession under the laws of this state, shall not, without the consent of his patient, be examined as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient. (Mills' Anno. Stat., vol. iv, Sec. 4824).

A query might arise—Could a physician testify in a case on trial in this state, being duly authorized to practice in some other state, but not in this state, and the communications between himself and the patient had taken place not in this state, but in the other state, and in a state where, under the law, the communications are not privileged?

PRIVILEGED COMMUNICATIONS.

It will also be noticed that the privilege is confined to any information acquired in attending the patient, which was necessary to enable the physician to prescribe or act for the patient. The first suggestion naturally coming into one's mind on this point is, Who is to determine whether the information was necessary to enable the physician to prescribe or act for the patient? A determination of how much was necessary, and how much was unnecessary, must clearly depend on medical knowledge. Therefore, here comes in, not a matter of law, but a matter of ethics, and it is the clear duty of the physician under such circumstances to advise the patient fully before listening to the communication from the patient, that it is not necessary to do more than answer the questions which may be put by the physician, and the physician should be careful not to put any questions which were not necessary to enable him to exercise his proper professional skill.

It would eliminate from the physician's knowledge any information as to who produced the abortion, as to the reasons for producing it, or any matter which would in any way enable the physician, if he would, to implicate any person in any violation of the law.

THE PHYSICIAN AS AN INFORMER.

Another ethical proposition which I deem worthy of consideration is: The physician, if he be so minded, might give to officers or others a vast amount of information to which he would not be permitted to testify, but which would enable them to locate or determine whether an offense had been committed, and perhaps indirectly assist them in determining who was guilty of the offense, and it has been the matter of frequent discussion as to what the physician's duties were in such matters. Take a flagrant case. A physician learns that a wilful and deliberate abortion has been committed when there was no excuse or justification for it in any way. Is it his duty to advise the officers charged with the enforcement of the law of his information, or, if they seek the information, is it his duty to divulge it? This is an ethical proposition. There is no law which prevents the attorney from divulging the confidential communications he may have with his client; there is no law which says that the priest shall not reveal that which he learns in the confessional But I undertake to say here and now that this question of the duty of the physician to the state or to the people can be solved but in one way, and that is, that his lips should be and must be sealed, unless the seal be broken by the patient herself.

Who would contend for a moment that if a murderer went to confessional in his church, where the church ordinances required a confession, and he disclosed to his priest the fact that he was a murderer, that the duty devolved on the priest to advise the civil authorities? Who would contend for a moment that it was the duty of an attorney to divulge the confidential communications which might take place between him and any criminal? The priest or attorney who would be guilty of such a violation of confidence would be hissed from his profession. I do not believe that any one can successfully urge a difference between the relation of attorney and client, priest and church member, and physician and patient.

PROFESSIONAL SECRECY IN GENERAL.

The Code of Ethics of the medical profession requires secrecy with reference to all matters made known to the physician by the patient. The generally recognized code says: "Secrecy . . . when required by peculiar circumstances, should be strictly observed." If I had to do with the making of the Code of Medical Ethics, I should move to strike out the words, "when required by peculiar circumstances," and that clause of the code should be left to read this way: "Secrecy . . . should be strictly observed."

I believe that the medical profession as a whole should adopt an entirely new code of medical ethics on the subject of confidential communications between the patient and physician. I do not believe that the physician should ever answer what might seem to be the most trivial question with reference to any matter concerning his patient which he has learned in his capacity as physician. If a physician is called to treat me, and I have a cold, or typhoid fever, or measles, or any simple disease, with which no moral stigma is in any way associated, yet, nevertheless, I believe that the proper code of medical ethics would seal the physician's lips as closely as though he were called on to treat me for some disease which was regarded as involving moral turpitude.

In other words, I believe that with reference to confidential communications the physician, as the attorney and as the priest, should always be on the witness stand, and should always be claiming the benefit of his privilege. Furthermore, it should not be the right of the physician to determine when his lips should be closed and when they might be opened. That province must rest, in my opinion, with other persons; first, his patient. The patient may unseal his lips whenever he chooses. Second, the court, under proper circumstances, may direct him to answer. But with these two exceptions, the physician's lips should always be closed, because the physician has no right to pass on the question as to whether or not any communication he may make will be harmful to me.

There are, for instance, insurance companies which write policies so that a person will receive certain benefits if he is sick as a result of certain diseases. If he was sick from other

diseases, he would receive no benefit The same is true with reference to accident insurance. Accidents received under certain circumstances result in certain benefits; received under other circumstances, receive other benefits. The physician can not determine what statement of his might be injurious to a patient.

In other words, it is not within the province or the power of the physician to determine the "peculiar circumstances" now mentioned in the Code of Ethics, as prescribed by the American Medical Association. The only safe proposition is for the physician to take the position that inviolate secrecy must always be preserved, and that the patient is the one to determine whether the peculiar circumstances exist that justify a disclosure.

I may be suffering with typhoid fever; somebody meets my physician on the street and says: "I understand Mr. S. is sick." "Yes." "What is the matter with him?" The physician, after resolving in his own mind the proposition that typhoid fever carries with it no stigma, thinks that it is all right to answer it, and says: "Why, he has typhoid fever." The physician may be wrong. He has heard of several instances where physicians did not make a correct diagnosis of a disease. The man he was talking to may be some sort of agent for a health insurance company. I may claim, and it may afterwards develop, that the disease was some other kind of a fever, or some other kind of a disease, accompanied by a fever. My health insurance policy may give me certain benefits if the disease is not typhoid fever, and may not cover typhoid fever at all.

He maintains that it should be exactly, in the case of every ailment, the same as with that of an abortion, or the same as where a person is afflicted with certain diseases which carry with them public contempt—the physician's mouth should be absolutely closed; and, however difficult it may be under existing conditions for a physician to avoid making certain disclosures, in my opinion the entire medical profession should take an absolute stand that a physician should never disclose anything learned from the patient in a professional capacity. It would not take the public long to become educated if physicians would be the instructors However innocent, however simple, the matter may be, when I propound the question to you, "What is the matter with Jones?" in my opinion your answer should be, however it may be framed, in substance this: "I am Mr. Jones' attending physician, and it is not proper that I should say anything in response to your inquiry."

Another very interesting proposition, as applicable to the matter under discussion: Suppose the patient dies, is the privilege waived by the death of the patient, or can the privilege be waived by any personal representative of the patient? The interest of this matter will be readily seen.

So far as the ethics of the situation are concerned, it is very clear they can not be changed by the death of the patient, and so far as the law is concerned, the situation is not changed.

In a very well considered case the following reasoning is used:

> It is thus seen that clergymen, physicians and attorneys are not only absolutely prohibited from making the disclosures mentioned, but that by an entirely new section it is provided that the seal of the law placed upon such disclosures can be removed only by the express waiver of the persons mentioned. Thus, there does not seem to be left any room for construction; the sections are absolute and unqualified. These provisions of law are founded upon public policy, and in all cases where they apply, the seal of the law must forever remain until it is removed by the person confessing, or the patient, or the client. The purpose of the laws would be thwarted, and the policy intended to be promoted thereby would be defeated, if death removed the seal of secrecy from the communications and disclosures which a patient should make to his physician, or a client to his attorney, or a penitent to his priest. . . . After one has gone to his grave, the living are not permitted to impair his fame and disgrace his memory by dragging to the light communications and disclosures made under the seal of the statutes. An executor or administrator does not represent the deceased for the purpose of making such a waiver. (Westover vs. Ætna Life Insurance Co., 1 N. E., 104.)

THE NEED OF MORE RIGID LAW.

CHARLES R. BROCK, Esq., said: I recognize fully the rule applicable to the physician, lawyer and clergyman with respect to confidential communications and yield to no man in my respect for that rule and its attendant obligations. This rule, however, may be modified by statute. If the physician finds that his patient has smallpox, diphtheria or other contagious disease, his duty to the public, imposed on him by law, removes his obligation of secrecy and requires him to report the existence of the disease to the proper authorities. This exception to the rule which seals the mouth of the professional man with respect to facts learned in the confidence of his professional duties is by virtue of a statute, but the statute itself is based on the principle of public policy. As the law now stands, I have no criticism to make of the excellent paper which has been read; but if the information received to-night from both the clergy and the physicians, that the crime of abortion is the greatest evil in our land, is correct, then the law ought to be changed. A statute should be enacted which would require the physician to report to the proper authorities every case of abortion that comes under his observation. If the law requires him to do this, his duty will be known by the patient before he is called, and the discharge of that duty can not, by any ethical principle, be regarded as a breach of confidence.

In view of the alleged enormity of this evil it will not be out of place to compare briefly our statute with the common law on the subject.

The statute is an improvement to the extent that it makes it an offense to commit or attempt an abortion at any period of gestation. At common law an abortion, committed with the consent of the mother, before the child had quickened in the womb, does not appear to have been a crime at all; if committed after the child had quickened, it was a high misdemeanor and, in certain circumstances, was held to be murder. Our statute makes it a felony either to commit or attempt to commit abortion at any time, but the punishment is inadequate, as confinement in the penitentiary for the shortest period of time satisfies the statute. The statute ought to be amended so as to fix a minimum term of say two years, with a maximum term of four or six years for attempting the offense at any period of gestation or for its commission prior to quickening. Its commission after quickening should be murder.

THE ATTITUDE OF THE PROFESSION TOWARD ABORTION.

DR. EDMUND J. A. ROGERS said that the attitude of the profession toward abortion is well known, and he emphasizes the protest against the too common crime. The standard of any people's civilization may be judged by the degree in which they recognize the right of each individual to life, liberty and happiness. Just as truly as an individual personal being comes into existence at the moment of conception, so does that individual at that moment become an integral member and ward of the entire community. The popular ideas prevailing where one receives his education illustrate the force of environment on weak and susceptible minds. We sometimes find even the medical man who has in his younger days become accustomed to the knowledge of the practice of this debasing custom—appears only half-hearted in his protests against it; while in a community where it is of rare occurrence the bare suggestion of it brings sensation of horror and disgust to all. Motherhood should always be honorable, and a social system which tolerates without condemning look the wholesale destruction of the progeny of the human race, but marks with unceasing shame the unfortunate mother, chiefly because she has not murdered her offspring, is not a condition of even respectable civilization. He considers that unfortunate woman who heroically faces the world and brings into her companionship the child of her misfortune a saint beside the misguided and cowardly married woman who through mistaken selfishness and perverting influences destroys her own unborn child. She not only undermines her own domestic happiness and deprives the state of a prospective useful citizen, but, saddest of all, she robs herself of some part in that only solace of the shadowed days of advanced life—the joy in the being of our offspring, and instead substitutes the haunting dreams of what might have been.

REMEDIES.

DR H. G. WETHERILL, in discussing remedies, said that none is possible for the complete wiping out of the crime, but it can be minimized through educational methods.

1. The immorality and criminality of the act must always be made plain, and especially the dangers to life and health should be pointed out.

2. Tolerance of the practice and altogether erroneous ideas of its fearful results are encouraged by the shamelessly open advertisements of abortifacients and of abortionists in our family papers. Through organized effort and moral suasion or compulsion this should be prevented. Since the result of such advertisements in many instances is a murder of some misguided woman or defenseless child, the advertising agent is in fact and should in law be held as accessory.

3. Enforce the law now on the statute books, or have one enacted that can be enforced.

4. Create a sentiment against the crime, the possibilities of which is illustrated by the influence of the Catholic church and the history and traditions of the Jews, among which people it is a rare crime.

5. Have educational articles on various topics of public interest and value published in the daily papers under the direction and with the indorsement of this society. This would, to some extent, counteract the vicious influence of the criminal advertisements.

6. Establish and maintain good maternity hospitals for the care of pregnant women and girls.

At the end of this paper Dr. Wetherill read some twenty-three advertisements, the meaning of which could not be misunderstood, which he had clipped from three Sunday morning papers of February 1, 1903.

H. H. HAWKINS, Esq., said he spent some time in investigating the legal phases of the matter and especially the actual operation of the law in the state of Colorado. The records at the state penitentiary show the following convictions and terms of sentence: In 1871, 1 case, 1 year; 1883, 1 case, 2 years, 10 months; 1888, 2 cases, 24 hours and 30 days, respectively; 1892, 1 case, 3 years. If the physicians are correct in their statements as to the extent of numbers of these criminal operations, it must be clear that the actual working of this is a farce. No wonder that the city of Denver swarms with abortionists. Five abortionists have been sent to the penitentiary in over thirty-four years—one of them for 24 hours and another for 30 days. The records of one case show that the girl upon whom the abortion was committed died. For this the defendant was sent for one year to the penitentiary. He could not find the record of the other four. He understands that no one is prosecuted in Colorado for abortion except where death occurs. This means that, as actually administered, the law only applies to the man who is so unskilful as to kill his patient. A skilful abortionist is immune from punishment. No abortionist has been sent to the penitentiary in over ten years. He has looked up the records of the criminal court in the city of Denver and has compiled a list of all prosecutions begun in the past thirty years, with the following result: In 1889, 2 cases, released without trial; 1887, 3 cases, one 24 hours in penitentiary, one 30 days, and one not arrested; 1901, one case, three years in penitentiary; 1892, one case; 1894, three cases; 1898, four cases, all of which were released without trial; 1902, one case, forfeited his bond, and the other is pending. In two of the cases that have been released without trial the defendants admitted their guilt and were allowed to go without punishment. Is it any wonder that abortionists fearlessly print their advertisements? He does not find the fault in the law itself, although he admits it could be improved. Some states, for instance, require the presence of two physicians in cases where abortion is indicated, and other states provide punishment for the woman who submits to an operation. Neither of these provisions is on the statutes of the State of Colorado. An amendment, also, might be made that a physician convicted of abortion should be forever barred from practicing his profession. He thinks that publicity is a remedial measure. Physicians are called to treat women after abortions. A law should be passed requiring them to report such cases to the authorities. He thinks the fault lies with the state of public sentiment. The prosecuting officers enforce only the laws which public sentiment demands should be enforced. The great majority of people justify the commission of abortion; that an unmarried woman should not be publicly disgraced, nor should a child be permitted to be born to which the stigma of bastardy will be attached. The people don't feel harshly toward an abortionist. Public sentiment must be aroused. That abortionists exist, thrive and prosper in Denver is the fault of the physicians. If you will appoint a grievance committee, and it will act fearlessly in all cases brought for investigation before them, the criminal abortionist will leave Denver for other pastures. This committee would see that these advertisements read to-night should cease. The law is ample on the subject. This committee would furnish information to the prosecuting officers and aid them in procuring conviction. Having back of it the influence of the hundreds of good physicians in this city, the committee would be a great power for good. One member of the medical profession said here to-night that a physician did not feel called on to act as a policeman. The legal profession has found such a position a mistake. Every profession needs its policemen, and that is exactly what the members of our legal grievance committee are until the medical profession appoints its police force and puts it to work. I submit that you have no right to complain that you have in your ranks quacks and abortionists.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Acne.

H. W. Stelwagon, in Text-book of Applied Ther., states that the most valuable remedies in the external treatment of acne are sulphur, salicylic acid, resorcin, boric acid and the mercurials. Sulphur may be applied as follows:

℞.	Sulphuris precip.	℥ss-ii	2.-8|
	Ung. aquæ rosæ	℥i	30|
M.	Ft. unguentum. Sig.: Apply locally; or:		
℞.	Sulphuris precip.	℥ii	8|
	Pulv. tragacanth.	gr. xx	1|30
	Spts. camphoræ	℥ii	8|
	Liq calcis	℥ii	60|
	Aq. destil q. s. ad.	℥iv	120|
M.	Ft. ung. Sig.: Apply locally.		

In cases where the skin is oily, an alcoholic lotion containing sulphur as the active ingredient is recommended:

℞.	Sulphuris precip.	℥ii	8|
	Spts. etheris	℥ss	15|
	Alcoholis	℥iiiss	105|
M.	Sig.: As a local application.		

Threadworms.

Injections per rectum should be employed to dislodge the worms and to destroy the eggs which are imbedded there. Aqua calcis is recommended as an efficient remedy in some cases or a saline solution in the strength of two or three drams to the pint of water. Quassia is one of the old-time remedies in destroying these worms, used in the form of a decoction made by boiling an ounce of quassia chips in a pint of water. Before giving this injection the bowel should be thoroughly washed out with soap and water. The quassia solution should be introduced slowly, with the patient lying on the back and the hips elevated.

Some authors recommend the following combination in young children:

℞.	Naphthalin	gr. x-xv	.65-1|
	Olei olivæ	℥i	30|
M.	Sig.: As an injection.		

Locally, the parts should be thoroughly cleansed and some antiseptic ointment applied. Some of the mercurial ointments serve this purpose and diluted in strength with lanolin or vaselin may be introduced with the finger to the inner side of the rectum. This is said to relieve the itching better than any

other preparation. Suppositories of iodoform are of similar value in relieving the excessive itching.

As to the internal treatment the best remedies are probably santonin, thymol and rhubarb. The following combination has been recommended in this connection:

℞. Pulv. rhei ..... gr. vi | 40
Mag. carb. 3i 4
Pulv. zingiberis ..... gr. i | 06

M. Ft. chart. No. vii. Sig.: One powder two or three times a day.

Ascaris Lumbricoides.

The round worm or ascaris lumbricoides, inhabiting as it does chiefly the small intestine, requires more especially internal treatment for its destruction and dislodgment. Santonin is regarded as the best preparation. It may be given in powder form as follows:

℞. Santonin ..... gr. ii | 12
Hydrarg. chloridi mitis ..... gr. i | 06
Sacch. lactis q. s |

M. Sig.: At one dose at bedtime or in solution according to Yeo as follows:

℞. Santonin ..... gr. vi | 40
Olei ricini 3iv 15
Syr. aurantii 3iii 12
Mucil. acaciæ 3vi 24
Aquæ carui q. s. ad ..... ʒvi 180

M. Sig.: Take one-half of the amount in the morning while fasting.

The oil of chenopodium was formerly used a great deal. It may be given in a mixture similar to the following:

℞. Olei chenopodii ..... m. viii | 50
Olei ricini 3ss 2
Mucil. acaciæ 3iii 12

M. Sig.: One teaspoonful three times a day before meals.

Acute Gastritis.

In the treatment of acute gastritis the following outline of treatment is recommended by Yeo in "Clin. Ther.":

1. Remove from the stomach any irritating substances that may be retained.

2. Give the inflamed stomach rest as complete as possible.

3. Administer only fluid, easily absorbed, unirritating and in small quantities at a time.

4. Apply measures to relieve the pain, hyperemia and irritation of the gastric mucous membrane, prevent morbid decomposition of the ingesta and correct excessive acidity when present.

5. Observe strict dietetic rules during and after convalescence.

In order to remove the contents of the stomach the stomach pump should be used. When there are objections to its use the author advises an emetic. He recommends pulverized ipecacuanha in doses ranging from gr. 5 (.30) to gr. 20 (1.30) according to age, given in from one to four tablespoonfuls of water. In other instances he recommends a hypodermic injection of apomorphin gr. 1/24 (.0025) to gr. 1/12 (.005). A suitable cathartic sometimes acts nicely in emptying the stomach. In children an aperient containing gr. 10 (.65) to gr. 20 (1.30) of the compound rhubarb powder is recommended, and in adults one or two drams of Carlsbad salts dissolved in warm water and given twice a day.

In order to carry out the second point in the outline of treatment the author recommends entire abstinence from food for two or three days. Nutrient enema may be given, the patient kept in bed and allowed to sip ice water occasionally. In less severe cases mild nutritious fluids may be given by the mouth, in doses of a few spoonfuls every hour. This should consist of equal parts of milk and lime water or milk and Vichy water or one or two tablespoonfuls of thin arrowroot water three or four times a day. In febrile cases with local pain leeches are sometimes applied locally to the epigastrium and a poultice applied after the leeches have been removed. As a substitute cold compresses or the ice bag should be placed to the epigastrium. A mustard poultice is sometimes recommended and is more agreeable to the patient than cold.

To relieve the pain after the contents of the stomach have been removed the following is recommended:

℞. Bismuthi salicylatis ..... gr. xxx 2
Ext. opii ..... gr. ii | 12
Acidi hydrocyan. dil. ..... m. xviii 1 | 20
Sodii bicarb. 3i 4
Mucilag. tragacanth. ..... ʒi 30
Aquæ q. s. ad ..... ʒvi 180

M. Ft. mistura. Sig.: Two tablespoonfuls every three or four hours.

When there is great tendency to vomiting not accompanied by much local pain the following is of service:

℞. Sodii bicarb. 3iii 12
Aq. laurocerasi 3iv 15
Aquæ q. s. ad ..... ʒviii 240

M. Ft. mistura; and:

℞. Acidi tartarici 3ii 8

M. Ft. chart. No. viii. Sig.: One powder to be dissolved in a tablespoonful of water and added to two tablespoonfuls of the mixture and drunk while effervescing. This may be repeated every hour or two.

Colbeck recommends the following combination to be employed in the treatment of acute gastritis:

℞. Bismuthi subnit. ..... gr. xii | 75
Sodii bicarb. ..... gr. xv 1
Acidi hydrocyanici dil. ..... m. iii | 20
Spts. chloroformi ..... m. xv 1
Aquæ q. s. ad ..... ʒi 30

M. Ft. mistura. Sig.: Shake and take two tablespoonfuls before meals three times a day. The bismuth and hydrocyanic acid are both sedatives to the gastric mucous membrane. The author in some cases advises the addition of magnesium sulphate to the foregoing combination in order to overcome the constipating effect of the bismuth.

When the pain is exceedingly troublesome the following combination is recommended:

℞. Liq. morph. hydrochlor. ..... m. v-viii | 30-.50
Acidi hydrocyanici dil. ..... m. iii | 20
Sodii bicarb. ..... gr. x | 65
Aquæ chloroformi q. s. ad ..... ʒss 15

M. Ft. mistura. Sig.: One tablespoonful to be taken every four to six hours.

Where effervescing draughts are better borne the following combination is of service:

℞. Sodii bicarb. ..... gr. xx 1 | 30
Aq. destil. ..... ʒi 30

M.

℞. Acidi tartarici ..... gr. xv 1
Aq. destil. ..... ʒi 30

M. Sig.: Mix the two solutions and drink while it is effervescing.

After evacuating the stomach with a siphon and cleansing the membrane with a solution of warm water, the following antiseptic solution may be used, in a similar manner, to wash out the stomach:

℞. Thymol ..... gr. vi | 40
Acidi borici 3iv 15
Aquæ destil. ..... Oi 480

M. Sig.: To be introduced and withdrawn through the stomach tube.

"Merck's Archives" recommends the following to relieve an attack of acute gastritis:

℞. Ichthyol 3iss 6
Tinct. opii 3i 4
Bismuthi subcarb. 3iss 6
Syrupi simplicis 3iv 15
Aquæ menth. pip. q. s. ad ..... ʒiv 120

M. Sig.: One dessertspoonful in water before meals.

Ewald states, in the treatment of acute gastritis, that tartar emetic and ipecacuanha should never be employed except in children. As to diet, the author recommends absolute rest for the first and second day or only strained barley or rice water or weak tea. On the third day the patient may be given a bread soup composed simply of bread and hot water, oatmeal or barley gruel, rice soup and perhaps one soft boiled egg. On the fourth day meat may be added once a day and thereafter a slow return to the usual bill of fare. Constipation must be corrected by giving one large dose of calomel, gr. x (.65) to

gr. xv (1.00). He especially recommends this procedure in the febrile form of acute gastritis. If no fever is present a seidlitz powder or a good dose of magnesium citrate will be of proper service.

Medicolegal.

Harmlessness of Desired Examination Not Material.—During the trial of the case entitled Chicago and Eastern Illinois Railroad Company vs. Stewart, brought by the latter party to recover for personal injuries, the company asked that he submit to a personal examination by a physician to be selected by the court. He refused. Then the company, by questions and offer, attempted to prove that such an examination would not be injurious to him. Objections to such questions and offer were sustained, and the Appellate Court of Illinois, First District, holds that these rulings were right. It says that the party had refused to be then examined. The court had no power to compel him to submit to an examination. The incident was closed. Whether or not, in the opinion of the physicians, such an examination would be harmful to him, became and was wholly immaterial.

Right of Action for Services of Health Officer.—By section 2,060 of the Kentucky statutes physicians appointed as health officers for cities, towns, and counties shall receive reasonable compensation for their services, to be allowed by the councils, trustees, or county courts of the cities, towns, and counties, and to be paid as other town or county officers are paid. In the case of Hudgins vs. Carter County the former alleged in his petition that, as health officer, he performed certain services during an epidemic of smallpox and presented his claim to the fiscal court, and the court failed to allow him anything thereon. The Court of Appeals of Kentucky says that the law as heretofore construed by it required him to first present his claim to that (the fiscal) court for an allowance, and, if not allowed, or if the allowance was unsatisfactory, then the claimant had either of two remedies—first, to appeal from the action of the fiscal court; second, to bring his action, that is, sue for his claim. But in this action he could not claim for anything more than the amount of the claim alleged to have been presented to the fiscal court for allowance, as in the opinion of the appellate court the presentation of the claim to the fiscal court for its allowance is a prerequisite to any action; also he could not recover against the county for services and medicine rendered and furnished to persons who were able to pay for same. He could only recover for his services and medicines rendered and furnished to indigent persons, and for services and general supervision rendered by him which was necessary or reasonably necessary to quarantine and keep the smallpox under control and prevent the spread of the disease, and for attention to those quarantined.

Physical Examination—Privilege Extends to Skiagraph.—The malpractice case of Aspy vs. Botkins, as it is entitled in the Supreme Court of Indiana, was brought by the latter party to recover for alleged negligence in the treatment of an injury which she had received in and about her right knee. While the physician sued was on his case in chief, and one of his attorneys was examining a physician and surgeon called as a witness in his behalf, such attorney made the request that the witness be allowed to examine the knee in the presence of the jury, that he might testify as to the condition of the knee at that time. Objection was made to the granting of this request, and the trial court refused to so order. This leads the Supreme Court to say that where the ends of justice require it, it is the duty of the court, on a timely application, to grant a reasonable request to have the party suing in a personal injury case, on the penalty of a nonsuit, submit to a physical examination with reference to the injury he claims to have sustained. The right is not, however, coextensive with the power of cross-examination, and some latitude of discretion must be recognized as existing in the trial court. Each case must rest on its own foundation, and the party sued who complains, on appeal, that the trial court abused its discretion in refusing to make the order, must be able to present a case where it is plain that the request should have been granted. The Supreme Court is satisfied that error did not appear in the present instance, for the reason, if for no other, that it required the party suing, a woman, to make a quasi public exposure of her person. That she subsequently offered to exhibit her limb to the jury did not operate to make the prior ruling improper. Again, while the physician was introducing evidence on his own behalf, his counsel called the party suing to the stand, and asked her whether a certain other physician had taken an *x*-ray photograph or skiagraph of her right knee. Objection was made to the question, and it was shown that whatever such other physician had done in relation to the knee had been done in treating the limb. The Supreme Court says that, in terms, the Indiana statute only purports to render the physician or surgeon an incompetent witness as to the matters therein specified, but it is evident that the protection would amount to nothing, in the case of an honest suitor, if the latter could be compelled to make the disclosure. It is hardly necessary to observe that, if the consultation was itself protected, a like protection would extend to the mute voucher thereof.

Constitutionality of Medical Practice Act.—The Supreme Court of the United States says, in Reetz vs. People of the State of Michigan, that the power of a state to make reasonable provisions for determining the qualifications of those engaging in the practice of medicine, and punishing those who attempt to engage therein in defiance of such statutory provisions, is not open to question. Dent vs. West Virginia, 129 U. S., 114; Hawker vs. New York, 170 U. S., 189, and cases cited in the opinion; State ex rel. Burroughs vs. Webster, 150 Ind., 607, and cases cited. It was objected in this case that the board of registration in medicine was given authority by Michigan Public Act No. 237 of 1899 to exercise judicial powers without any appeal from its decision, inasmuch as it might refuse a certificate of registration if it should find that no sufficient proof was presented that the applicant had been "legally registered under Act No. 167 of 1883." That, it was contended, was the determination of a legal question which no tribunal other than a regularly organized court could be empowered to decide. The answer is, that the decision of the State Supreme Court is conclusive that the act does not conflict with the state constitution, and the Supreme Court of the United States says it knows of no provision in the federal constitution which forbids a state from granting to a tribunal, whether called a court or a board of registration, the final determination of a legal question. Indeed, it not infrequently happens that a full discharge of their duties compels boards, or officers of a purely ministerial character, to consider and determine questions of a legal nature. Due process is not necessarily judicial process. Neither is the right of appeal essential to due process of law. But while the statute makes in terms no provision for a review of the proceedings of the board, yet it is not true that such proceedings are beyond investigation in the courts. In Metcalfe vs. State Board of Registration, 123 Mich., 661, an application for mandamus to compel this board to register the petitioner was entertained, and although the application was denied, yet the denial was based, not on a want of jurisdiction in the court, but on the merits. Again, the court holds that when a statute fixes the time and place of meeting of any board or tribunal, no special notice to parties interested is required. The statute is itself sufficient notice. If this party had applied at any meeting for a hearing, the board would have been compelled to grant it, and if on such hearing his offer of or demand for testimony had been refused, the question might have been fairly presented to the state courts to what extent the action of the board had deprived him of his rights. Then, he seemed to assume that the proceedings before the board were in themselves of a criminal nature, and that the state by such proceedings was endeavoring to convict him of an offense in the practice of his profession. The court says that this was a mistake. The state was simply seeking to ascertain who ought to be permitted to practice medicine or surgery, and criminality arises only when

one assumes to practice without having his right to do so established by the action of the board. The proceedings of the board to determine his qualifications were no more criminal than examinations of applicants to teach or practice law, and if the provisions for testing such qualifications are reasonable in their nature, a party must comply with them, and has no right to practice his profession in defiance thereof. It was further insisted that having once engaged in the practice, and having been licensed so to do, he had a right to continue in such practice, and that this statute was in the nature of an ex post facto law. But the court says that the case of Hawker vs. New York, 170 U. S., 189, was decisive on that question. The statute does not attempt to punish him for any past offense, and in the most extreme view can only be considered as requiring continuing evidence of his qualifications as a physician or surgeon.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 4.

1 *Observations on the Plague in the Philippines and India. Charles B. Ewing.
2 *Imperative Conceptions: A Study in Differential Diagnosis. L. Harrison Mettler.
3 Examination of Milk by the General Practitioner. Henry L. K. Shaw.
4 Report of a Case of Almost Fatal Poisoning by Six Grains of Quinin. Lewis A. Conner.
5 Reduction of Intussusception. David J. Minchin.
6 Death of a Fetus Following an Injection of Diphtheria Antitoxin into the Mother. E. R. Houghton.

1. **Plague.**—Ewing describes the plague as he observed it at Manila with special reference to tests for the detection of the bacilli in the blood. The leucocytosis and increase in blood plaques, even where no bacilli are to be found, serve to make the distinction between it and malaria and typhoid fever. It is only in later phases of the disorder that the organism appears in numbers, and twenty-four to forty-eight hours before death the blood becomes practically a pure culture. He describes one or two abnormal types such as a case of cutaneous plague in which the chief lesion consisted of a large pustule or an aggregation of small ones, in the right lumbar region, without enlargement of the lymph glands being noticeable. The *Bacillus pestis* was present in the blood. Such cases, however, are rare. As regards precautions, he took none except using an antiseptic on his hands and on the soles of his feet on account of the plague vomit which through lack of the usual hospital facilities was frequently deposited on the floor. The examination of the blood he considers on the whole of little diagnostic value. In this his opinion was confirmed by the testimony of Haffkine whom he met in India. The treatment of the disease, aside from the use of Yersin-Roux serum, is symptomatic. The death rate varies from 40 to 95 per cent. In Hongkong the total was 93.4 per cent. among Chinamen; 77 per cent. is reported among the natives of India; 60 per cent. among the Japanese and 18.2 per cent. among Europeans. Filthy surroundings, lack of ventilation, etc., are especially favorable to the propagation of the disease, and its association with cholera is emphasized by recent evidence in the Philippines and in India. He regards the plague as a cosmic question governed by hygienic, sanitary, commercial, and in part religious considerations. The races that are dangerous from a pest standpoint are all located in the Orient, where ignorance, religion and caste tend to swell the already large mortality. He is somewhat doubtful about quarantine; he thinks it may create a false security.

2. **Imperative Conceptions.**—Mettler discusses neurasthenic obsessions and what he calls insane imperative conceptions which seem to be associated with auditory hallucinations in the illustrative cases he gives.

Philadelphia Medical Journal.

April 4.

7 *Movable Right Kidney as a Cause of Pancreatic Diabetes, with Report of Cases Cured by Nephropexy. Sherman T. Brown.
8 *Impressions of Differences in Practice at Low and High Altitudes. Will H. Swan.
9 A Critique of the Logical Processes of Medicine. W. B. Konkle.
10 Subcutaneous Emphysema from Perforation of the Pleura by Extension of Tubercular Ulceration from the Lung. Starling Loving.
11 *Mouth Infection, Due to Natural Teeth. (Concluded.) D. D. Smith.

7. **Pancreatic Diabetes from Movable Kidney.**—Brown's article is largely a consideration of the anatomic conditions existing in movable kidney, with special reference to the effects on the pancreas, and also includes a report of cases where nephropexy appeared to cause recovery from pancreatic diabetes.

8. **High and Low Altitudes.**—Swan has investigated the comparative effects of high and low altitudes in different diseases He sent out a number of questions to physicians and analyzes the answers herewith. His conclusions are that pneumonia, instead of being less curable or more fatal at altitudes such as those of the Rocky Mountain region, is on the other hand more curable. Statistics show better results. He gives figures which are opposed to the prevalent idea and also to the opinion of 60 of the 93 physicians who expressed their views in response to his inquiry. In reference to typhoid fever, 99 seem to think it runs a shorter course at high altitudes, and that is the writer's impression. The replies he received, moreover, gave the general impression that functional nervous disturbances are more frequent and more intractable at higher altitudes. His own belief, however, is that they are about as serious and act in the same manner as at lower levels, and he gives reasons why the other impression may have been derived from increased nervous strain which happens in a large number of cases which go to Colorado for health. It is also the opinion of Dr. Eskridge and Dr. Pershing that functional nervous disorders are not more common or more troublesome at high altitudes. Swan thinks that biliary or digestive disorders are a little less frequent than at the sea level, though some people appear to be more prone to them. He finds rather more frequent use for the salicylates, and that chronic rheumatic affections, especially of the myalgic type, seem to be rather more frequent, while acute articular rheumatism is less so. Convalescence after illness is apt to be more prompt at high altitudes on account of the greater chance of being in the open air and sunshine, and it also seems to him that there is capacity for doing more work, physical and mental, in a short time and without more fatigue, if the effort is not too long continued, but he is quite sure that prolonged, severe, nervous strain tires people more. Whether this applies to physical work, he is not certain.

11. **Mouth Infection.**—Smith advocates thorough cleansing of the teeth and absolute sanitation. Instead of the ordinary tooth-brush and dentifrice, toothpick and dental floss, soaps, so-called germicidal washes or other agencies, he would have the most careful and complete removal of all concretions, all calcic deposits, semisolids, bacterial placques, to be followed by thorough polishing by hand methods not only of the more exposed labial and buccal surfaces, but the lingual, palatal and proximal surfaces as well, using for this purpose orange-wood points in suitable holders, charged with finely ground pumice stone as a polishing material. He believes there is an enormous amount of illness of all sorts due to the condition of the oral cavity, which can only be relieved by dental treatment.

Medical News, New York.

April 4.

12 *The Significance of Variations in the Internal Secretions. O T. Osborne.
13 *The Significance of Oxaluria. J. Bergen Ogden.
14 *The Prognostic Value of the Diazo-reaction in Pulmonary Tuberculosis. Francis C. Wood.
15 *Hyperacidity of the Urine. T. W. Hastings.
16 *The Prognostic Significance of Albumin in the Urine. Edward W. Lambert.
17 *Narcotic Abuse and the Public Weal. J. B. Mattison.
18 *The Results of Intravenous Injections of Dilute Formalin Solution in Septicemic Rabbits. William H. Park and William A. Payne.
19 *Expert Evidence: A Reply to Hon. John Woodward. William L. Howard.

12. **Internal Secretions in Disease.**—The conditions which Osborne would specially like to see proven as due to derange-

ments of internal secretions are: Hysteria, neurasthenia, melancholia, hemophilia, rickets, atheroma, sclerosis, gout, leukemia, chlorosis, shock, diabetes and the general neurotic condition. He considers the thyroid the principal vaso-dilating material producer, while the suprarenals are undoubtedly the main organs of the body to furnish vaso-contracting stuff and the possible cause of sclerosis, endarteritis, etc. In shock there is low blood pressure and vascular paralysis, and to meet these conditions we have in suprarenal or adrenalin chlorid the agents we desire for the condition. Hysteria he considers may possibly be due to hypersecretion in the thyroid, and this seems to be associated with sexual changes. The adrenals seem to have something to do with the production of diabetes, and he has seen good results follow treatment with the suprarenal substance in diabetic conditions. He has also suspected that these organs have something to do with gout, in which he has found thyroid treatment of benefit. In acromegaly the thyroid has always been found atrophied. Thymus, theoretically, he believes may be of value in tuberculous cases as also in hemophilia and rickets. In conclusion he notes a case of lymphatic leukemia which seemed to be injured by remedies which reduced the size of the glands generally, such as nucleinic acid and especially arsenic.

13. **Oxaluria.**—The occurrence of oxaluria and its causes are noted by Ogden, who thinks that aside from ingested articles containing oxalic acid, it may be the result of imperfect intestinal elimination due to an excessive carbohydrate or nitrogenous diet. How oxaluria comes about in nervous disorders he is unprepared to say.

14. **The Diazo Reaction in Tuberculosis.**—From a study of some 363 cases of tuberculosis, Wood concludes that:

1. If the urine of a case of pulmonary tuberculosis shows no diazo-reaction and a kidney lesion can be excluded, the prognosis is favorable. Only 10 per cent. of the moderately severe cases here recorded gave a reaction, and in a number of these the reaction disappeared on treatment. Early cases not ill enough to apply for hospital treatment do not give the diazo-reaction.
2. If the urine of a case of pulmonary tuberculosis shows an occasional diazo-reaction the prognosis is not necessarily grave, as only some 66 per cent. of the patients showing an occasional positive reaction die.
3. If the urine of a case of pulmonary tuberculosis shows a continuous strong diazo-reaction the prognosis is very grave, since a large proportion of such cases dies within six months.
4. The presence of a diazo-reaction on the first examination of a patient should not debar the case from a thorough trial of climatic treatment in a proper sanatorium.

15. **Hyperacidity of the Urine.**—Hastings gives the methods of testing for urinary hyperacidity. The method which he considers best is the one recommended by Naegeli, similar to that in vogue for determining the total acidity of the gastric contents, using phenolphthalein as an indicator and titrating with a decinormal solution of sodium hydroxid. The normal acidity has been described by Brown as equal to 2.5 c.c. of decinormal sodium hydroxid solution for 10 c.c. of urine, and his cases as published showed degrees of acidity varying from at least twice above normal to nearly five times normal. A degree equivalent to 4 c.c. is often without symptoms, but above that burning on micturition, frequent micturition, enuresis, and symptoms of cystitis occur in neurotic individuals particularly. Among 100 cases, 40 presenting symptoms of disturbance of micturition in the course of some affection were tested as regards acidity of urine and 30 of this number were normal, including cases of rheumatism of various kinds, nephritis, cystitis, alcoholic hepatic cirrhosis, carcinoma of rectum and various nervous disturbances. The 10 cases in which the acidity varied from 6 to 14 c.c., included 3 of rheumatism, 6 of nephritis, and 1 of chronic valvular cardiac disease. The disturbance of micturition, however, was no greater than in the 30 negative cases. In the third set of cases of 21 diagnosed as neurasthenia after thorough clinical and laboratory examinations, the only abnormal change in 14 was an increase of acidity from 5.5 c.c. to 12 c.c. of decinormal alkali solution. The 7 remaining cases showed normal degrees of acidity, but there were in some of them other conditions such as deposits of urates, uric acid, oxalates, etc. The alkali seemed to alleviate the conditions in both classes, and suggests a rational treatment for many cases of frequent or nocturnal micturition.

16.—See editorial in THE JOURNAL, Feb. 28, 1903, p. 588.

17. **Narcotic and Drug Habits.**—Mattison speaks of the dangers of the drug habits and especially cocain, which ultimately tends to insanity if the habit is continued, and the need of a law requiring regulation of the sale of cocain, morphin, etc., and a law compelling nostrum makers to print the formula on the wrapper and the amount of morphin, etc., contained in each dose.

18. **Formalin in Septicemia.**—This article gives the details of experimental research. The quantity of formalin that may be safely given having been determined, a number of rabbits were injected intravenously with 1 to 10 c.c. of an ascitic broth culture of two strains of slightly virulent streptococci from the human blood, an amount sufficient to kill probably in from one to four days. A number was used as control cases. In others, 1 to 5,000 solution of formalin was also injected. In one case a rabbit which received 100 c.c. of a five-thousandth solution of formalin, twenty-four hours before the streptococcus, lived considerably longer than the controls, but as a rule, according to his tables, those receiving formalin injections died earlier than those not receiving them. He thinks the experiments, so far as they go, show that we should be guarded in using formalin, and carefully weigh each case to see whether good or harm has been done. The intravenous injection of water plus sodium chlorid may prove better than water plus formalin.

19. **Expert Evidence.**—Howard's article is a reply to an attack on medical expert evidence by ex-Judge Woodward of the New York Supreme Court in which it was most savagely denounced. Howard makes out that the fault is in the lawyers and judges and that the lawyers should take the beams out of their own eyes before beginning to meddle with the mote in the doctors'.

Boston Medical and Surgical Journal.

April 2.

20 *Cesarean Section for Placenta Previa, with Report of a Case. P. E. Truesdale.
21 *Further Remarks on the Treatment of Placenta Previa. Frank A. Higgins.
22 *Notes on X-Light. William Rollins.

20. **Cesarean Section for Placenta Previa.**—The first part of Truesdale's article is a review and analysis of the literature. He finds 13 cases of placenta previa reported in which Cesarean section was performed, in which four mothers and four children died, a large percentage. Two of the cases, however, were operated on only as a very last resort, after everything else had been tried. Excluding these two, the fetal and maternal mortality was 22.2 per cent. each, a much better figure. In all these cases, however, there had been alarming hemorrhages, and the results showed that Cesarean section is not contraindicated when the vitality of the patient is low from loss of blood He reports a case, one of the 13, in which the mother was saved though the child was lost. He insists on the importance of rigid asepsis in vaginal examination where placenta previa is suspected. He would say that Cesarean section would seem to be the best treatment for placenta previa, complete or partial, when the child is viable, and when the diameters of the pelvis or the conditions of the soft parts render the operation of dilatation and version performed with sufficient rapidity to save the child a dangerous procedure for the mother.

21. **Placenta Previa.**—Higgins holds the opposite view as regards the propriety of Cesarean section in this condition. He has never seen a case where it was advisable or justifiable. The only suitable condition would be with the mother and child in a good condition, before the occurrence of severe hemorrhage and with the os undilated. He emphasizes the fact that partial previa is not by any means as harmless for the mother as generally held. Of the 5 cases reviewed, 2 with partial placenta previa were the ones with the most serious condition, not on account of the situation, but on account of the neglect of the hemorrhage.

22. **X-Light.**—Rollins has by observation and correspondence with investigators learned of a number of cases where the

eyes had been impaired by working in *x*-light. He has recently had occasion to examine a man who had been exposed to a considerable extent since 1896, and though he is less than 40 years of age he can not read the daily papers. To enable him to see his work comfortably at a distance of 43 cm., it was necessary to provide him with double convex glasses, number 26. The necessity of having a non-radiable box enclosing the tube with only the smallest aperture sufficient to supply the rays where they are required is insisted on, and the hands holding the cryptoscope should be protected by a nonradiable covering. During the pumping and tuning of the *x*-ray tubes they should be kept in an oven with nonradiable walls. He has also noticed that while cancer is not considered contagious, yet several persons who have been treating the disease by the *x*-rays have been affected. He thinks this might have been avoided if proper precautions had been taken. He says it is, to say the least, unwise to be constantly treating cancer and other diseases by the *x*-light without regularly fumigating the room and keeping the cryptoscope and other appliances sterile. He advises fumigating the *x*-ray room with formalin vapor every night, and to have the instruments used of such material that they can be sterilized by heat.

American Medicine, Philadelphia.

April 4.

23 *The Use of Compressed Air to Enhance and Prolong the Action of Remedies on the Cerebrospinal Axis: Synopsis of Experiences in Applying the Method over Six Thousand Times. J. Leonard Corning.
24 *Hernial Complications. John B. Harvie.
25 Case of Bubonic Plague, with Exhibition of the Bacillus. Judson Daland.
26 Amyotrophic Lateral Sclerosis in a Boy of 15 with a History of Acute Anterior Poliomyelitis in Infancy. Alfred Gordon.
27 *The Influence of Altitude on the Mortality of Pneumonia. Henry W. Hoagland.
28 *The Present-day Mortality of Pneumonia. Alexander G. Brown, Jr.
29 *Tetanus. Isaac R. Trimble.
30 *Lobar Pneumonia and Its Treatment. G. Wehrle.
31 On the Classification of Museum Specimens. M. E. Abbott.

23. **Compressed Air in Therapeutics.**—The effects of compressed air on caisson workers suggested to Corning a method of using this means to enhance the effects of various remedies. The potency of certain remedies which possess a chemical affinity for nervous matter is enhanced when the subject taking them remains in a condensed atmosphere. He describes his apparatus and remarks that the method is of no use in the management of inflammatory and degenerative conditions of the cerebrospinal axis. It may avert the painful crises of ataxia, but does not affect the progress of the disease. In disseminated sclerosis, spastic spinal paralysis, poliomyelitis, its influence is also nil, and it is contraindicated in diseases of the blood vessels, and in all cerebral accidents arising from this source. In neuritis also it is not effectual; it rather augments than diminishes the pain. The same is true of articular rheumatism. The affections in which it is of value are the cerebral and cerebrospinal affections of a functional nature in which pain, exhaustion, insomnia or depression are prominent features. In these its effects are striking and beyond those obtainable in any other way. By increasing the blood pressure in the renal blood vessels, it causes diuresis, which effect is particularly manifest if a diuretic be given even in insignificant doses.

24. **Hernial Complications.**—Harvie describes some abnormal cases of hernia, mentioning one or two in which the whole intestinal tract formed a hernia and describing a case in detail where the whole bladder passed down into the scrotum from severe muscular straining and functioned there normally.

27. **Altitude and Pneumonia.**—The common opinion that pneumonia is more fatal at high altitudes is deprecated by Hoagland, who gives statistics showing that even a better percentage of recoveries is obtained at altitudes up to 7,000 feet than at the sea level. Above a certain altitude he admits that the fatality is greater, but the exact line of demarkation is not yet fixed by experience.

28. **Pneumonia.**—The increase of mortality of pneumonia and its infectious character are insisted on by Brown, who attributes much of the great fatality of late years to influenzal complications.

29. **Tetanus.**—Several cases treated by antitoxin are reported more or less briefly by Trimble, who thinks it is an agent of considerable value, especially in delayed cases.

30. **Pneumonia.**—After general remarks on the prevalence of pneumonia and its mortality, Wehrle discusses its treatment. He finds little to indicate any specific for the condition, and thinks on the whole the best results come from rational symptomatic management, including absolute rest in bed from the beginning, exclusion of visitors, good nursing, with a nutritious and digestible diet, elimination, use of normal salt enemata, abundance of fresh air, leaving fever practically untreated unless it is too severe, and employing stimulants when they are required, such as strychnin, arsenic, and ether and camphor in desperate cases.

New York Medical Journal.

April 4.

32 *Terminal Coma in Diabetes. Arthur R. Elliott.
33 Syphilitic Pseudotabes. Report of a Case; The Differential Diagnosis of Tabes. (Concluded.) Joseph Collins.
34 *Practical Points on Intubation of the Larynx for Croup, with a Report of Thirty-six Cases. Fielding L. Taylor.
35 *The Practical Recognition of the Tubercle Bacillus in the Sputum. Charles B. Fitzpatrick.
36 *The Jews as Immigrants—From a Medical Standpoint. Maurice Fishberg.

32. **Diabetes.**—The terminal coma of diabetes is illustrated by four cases reported by Elliott. The first was a well marked case of diabetic collapse, the diabetic heart coma of von Schmitz, induced by myocardial degenerative changes under the influence of the depraved diabetic nutrition. It differs from coma diabeticum in the absence of blowing dyspnea, in its short duration and in the profound cardiac symptoms and history. In the second case the exciting cause was due to dietetic imprudence, irritating the kidneys, producing latent nephritis and uremia. In the third case there was a primary diabetic toxemia with finally death from uremic poisoning, and in the last case the patient died from hemiplegia. No autopsy was obtainable, though there was a trauma as an important element. Prophylaxis is of first importance. The earliest indication is the appearance in the urine of the acid toxins, acetone, diacetic acid and beta oxybutyric acids showing the Gerhardt's reaction, the importance of which he emphasizes. With the first appearance of this symptom we should relax the rigidity of the diet, protect against all disturbing nervous influences, from fatigue and cold, stimulate elimination so as to promote excretion, having the patient drink as much water as possible, and use copious colonic irrigations. He believes in this stage in the use of simple alkalies such as sodium bicarbonate, that do not interfere with gastric digestion if in proper doses. If coma should appear, or its prodromes, the patient should be put to bed, the bowels thoroughly evacuated, stimulants and digitalis administered and the alkalies given in enormous doses. Oxygen may be administered freely by inhalation. The prognosis, however, with all that can be done, is bad.

34. **Laryngeal Intubation.**—Taylor describes the methods in intubation, calling special attention to the dangers, pushing down of false membrane, etc., which is rare. Tracheotomy may become necessary and sometimes expiration is impeded or prevented by the valve action of a piece of partially detached membrane at the lower orifice of the tube. In such cases it may be expelled sometimes by suddenly withdrawing the tube after brandy has been given to produce cough. If this is not effective, he uses a short O'Dwyer foreign-body tube for an hour or two, or tracheotomy may be required. Extubation is more difficult than intubation and expression is much more uncomfortable to the patient. Another tube should be ready to be inserted if required. He believes in the hard rubber tubes rather than metal ones, and reports a number of cases.

35. **Tubercle Bacilli.**—The method described by Fitzpatrick for detecting the tubercle bacilli consists in staining a thin layer of sputum which has been spread and dried upon the surface of a glass slide or cover glass, and then decolorizing it. If the tubercle bacillus is present, it retains the stain, while the rest of the preparation becomes colorless. Another stain of a different color is employed to restain the parts that have been decolorized. It is based on the usual methods, with the

employment of 3 parts of hydrochloric acid and 97 parts of a 70 per cent. alcohol as a decolorizing agent, followed by the use of an alkali contrast stain. The latter neutralizes the acid and prevents its further action as a decolorizing agent, thus insuring a permanent preparation.

36. **The Jews as Immigrants.**—Fishberg protests against Shively's statements in the "New York Medical Journal." February 7, as to the deterioration of the character of the immigrants, especially the Jews, which he thinks are, as far as health is concerned, more desirable than the more robust looking Irish or Germans.

St. Louis Medical Review.

April 4.

37 *A Case of Septicemia. Employment of Formalin. W. B. Dorsett.
38 *Carelessness in the Use of the Roentgen Rays. W. S. Newcome.

37. **Formalin in Septicemia.**—In the septicemic cases reported by Dorsett formalin solution was used according to the same formula as that of Barrows, 1 to 5,000, and there seemed to be a temporary amelioration after the two injections of 500 c.c. which were administered. The patient, however, died of hemorrhage from rupture of an artery in the broad ligament. The case was a desperate one from the start, and Dorsett does not consider it a proper one for the fair trial of a new remedy.

38. **X-Rays.**—Newcome calls attention to a certain amount of carelessness that is noticed in the therapeutic use of these rays; neglect as to even the most ordinary precautions as to time, distance from the tube, etc, as in certain cases he reports. He also notes that the protection for the adjoining parts is often insufficient; some persons relying on tinfoil, which is certainly not to be depended on.

Cincinnati Lancet-Clinic.

April 4.

39 The Diagnosis and Treatment of Diphtheria. R. C. Longfellow.
40 Inebriety in Ancient Egypt and Chaldea. T. D. Crothers.
41 President's Address, Alumni Association Medical College of Ohio. George B. Orr.
42 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

Virginia Medical Semi-Monthly, Richmond.

March 27.

43 *Gastro-enterostomy. John B. Deaver.
44 *A New and Original Stitch and Method of Closing the Abdominal Walls and Other Deep Incisions. Jacob Michaux.

43. **Gastro-Enterostomy.**—Deaver's article reviews the various methods of performing gastro-enterostomy and its indications. He thinks it ought to be heartily endorsed in gastric and duodenal ulcer. In certain gastric disorders, such as chronic gastritis with multiple erosions, some secretory neuroses of the stomach rebellious to internal medication, etc., it may be indicated, but when it is required in malignant obstruction of the pylorus, it means mere palliation, the disease having gone beyond the possibility of cure. Many benign obstructions due to adhesions thrown out about neglected biliary tract infections may be avoided by earlier operations in gall-bladder surgery. He describes the different methods.

44. **New Abdominal Stitch.**—The method here recommended by Michaux is as follows:

Take a suture with a needle on either end, and pierce the peritoneum only on one side, bringing the needle out just under the surface of the rectus muscle (supposing we are closing an incision in the median line); pass over the rectus and catch up the aponeurosis. Now lay down needle No. 1, and take up the other and repeat the operation on the opposite side. Now, the peritoneum and aponeurosis are pierced on both sides. The next step is to cross over, taking up the aponeurosis again (with needle No. 1) on the opposite side, carrying the needle through the fat and skin at one thrust. Then needle No. 2 is taken across the incision; the aponeurosis pierced as well as the overlying fat and skin on that side. This completes the stitch.

The aponeurosis is pierced twice on each side, thus ensuring a firm hold upon this structure, and each thread draws the edges together. This the author thinks tends to ensure exemption from hernia. The advantages claimed are uniform tension along the walls of the incision, close approximation of edges of aponeurosis, complete removal of suture after healing, and general simplicity of the operation. He does not claim priority, as he finds Murphy had introduced it before, though it was original with himself.

Medical Fortnightly, St. Louis.

March 25.

45 *How to Cure by a Novel Method, Hopeless Cases of Deafness and Discharge from the Ear. Robert Barclay.
46 The X-Ray Treatment of Cancer, with Report of Successful Cases. Everett J. Brown.
47 Surgery of the Heart—Illustrated with Fifty Stereopticon Slides. (Continued.) Benjamin M. Ricketts.

45. **Deafness.**—Barclay considers that in many cases of hopeless deafness the difficulty is due to interference with the physical conditions in the ear, the chain of bones, ear drum and so on, are limited or embarrassed in their function by adhesions, etc. In these cases he says there is but one rational method of procedure and that is to liberate the deeper portion of the auditory conducting mechanism from the improperly immobilized portion without, making provision for aerial soundwaves directly to the deeper, still movable portion. The method which he finds most indicated in old hopeless cases is that of affecting the removal of the drum head, hammer and anvil bones—the stirrup bone also being occasionally removed, and bands, synechiæ, septa, growths, etc., dealt with as indicated, sufficient to liberate and expose the more deeply lying auditory structures. This does away with the defect of drainage by the natural route in case of discharge, and in catarrhal cases produces a skin-like or dermoid transformation of the mucous membrane. He thinks this method should be resorted to when radical methods have been found powerless to correct, and he says that when you find a deaf person who speaks habitually in an abnormally low tone of voice, who hears better in a noise or noisy places—no matter how long he may already have been afflicted, and notwithstanding that every other remedial measure may have been tried in vain—he may yet be relieved by resection of the auditory conducting mechanism, proportionately to the distinctness of these symptoms.

Proceedings of the Pathologic Society of Philadelphia.

February.

SYMPOSIUM ON SERPENT VENOM.

48 *The Poison of Serpents. S. Weir Mitchell.
49 *Venom and Antivenene. Joseph McFarland.
50 *A Comparative Study of Snake Venom and Snake Sera. Hideyo Noguchi.
51 A Case of Remarkably Large Cyst of the Cerebellum. Joseph McFarland.
52 A Fatal Case of Polyarthritis Complicated by Choreiform Symptoms and Vegetative Endocarditis. Augustus A. Eshner.
53 A Case of Ulcerative Endocarditis Involving the Pulmonary Valve, Causing Perforation of the Ventricular Septum, Gangrene of the Nose and Ears, Multiple Infarcts in the Kidneys, etc. H. M. Fisher and W. T. Longcope.
54 Report of a Case of Bubonic Plague, with the Exhibition of the Bacillus. Judson Daland.

March.

55 *Some Experiments on the Immunization of Cattle Against Tuberculosis. Leonard Pearson and S. H. Gilliland.
56 A Contribution to the Pathologic Histology of Bullous Keratitis as It Occurs in Glaucomatous Eyes. G. E. de Schweinitz and E. A. Shumway.
57 *Autopsy Statistics at the Children's Hospital, with Reference to Tuberculosis and Its Etiology. Alfred Hand, Jr.

48. **The Poison of Serpents.**—Mitchell gives the history of his own investigations of the subject.

49. **Venom and Antivenene.**—After first noting the work on the subject by Phisalix, Calmette and others, McFarland reports his own experimental work in the line of developing an antivenomous serum. He adopted the plan of intravenous injection when using viperine material, to avoid the extensive local lesions which invariably followed its subcutaneous injection. A remarkable effect, however, of each injection in the horse was syncope, which, however, was soon recovered from. In this way he produced an antivenene serum of considerable value from the horse. Of three horses first experimented on, one succumbed to extensive superficial necrosis following the venom injections. Of the other two receiving intravenous injections, one died of pneumonia and the third horse stood the treatment well until by accident some of the venom was apparently injected into the sheath instead of into the vein itself, resulting in extensive periphlebitis with enormous swelling of the neck and death from suffocation. The point of special interest is that two of the animals died from infection, which is of interest as Welch and Ewing have shown that rattlesnake venom destroys the bactericidal properties of the blood. The

second fact of interest is that in spite of the long immunity, and the very numerous injections of venom which the third horse had received, it appeared to have developed no immunity against the principle he had sought to combat—that is, the local irritative poison, but at the end of a year succumbed to it. The serum of this horse was found to possess properties similar to the antivenomous serum of Calmette; that is, it protected against cobra venom heated to 70 C. for a time, always against rattlesnake and other venoms heated to 70 C., by which the irritating poison was destroyed, but it seemed to have no action on the irritative principle itself of venoms.

50.—See Univ. of Penn. Med. Bulletin, November, 1902.

55. **Immunization of Cattle Against Tuberculosis.**—Pearson and Gilliland have experimented along the line of Behring's work, and find the following conclusions justified:

1. That after repeated intravenous injections of cultures of tubercle bacilli from human sputum the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected. 2. That by intravenous injection much larger quantities of culture of human sputum tubercle bacilli than are necessary to confer a high degree of resistance, or immunity, on the vaccinated animal, may be administered without danger to that animal. We now have in progress incomplete experiments on a number of young cattle, some of which have been under way since last March, for the purpose of testing the duration of this immunity and the extent to which it is effective in protecting cattle against infection from natural sources. We have also started an experiment which we hope will throw light on the open question as to the minimum quantities of culture of non-virulent tubercle bacilli that it may be necessary to administer in order to confer a serviceable degree of immunity, and, further, whether it may be possible to simplify the process of vaccination by successive injections of a few cultures of progressive degrees of virulence.

57. **Tuberculosis in Children.**—From autopsy statistics of the Philadelphia Hospital, Hand concludes that:

1. The majority of cases of tuberculosis in infants and children is apparently the result of an air-borne infection. 2. A certain percentage of cases is of primary intestinal origin, probably the result of food-infection, as those cases which were subjected to exhaustive experimental study gave bacilli resembling the bacillus of bovine tuberculosis in all of its characteristics. This group is sufficiently large to render imperative measures of prevention. 3. From an anatomic standpoint there is no way of distinguishing those cases of primary bronchial tuberculosis which might be the result of food infection from those in which the infection is air-borne. 4. The large proportion of cases in infants suggests either a greater exposure or a less resistance to the infection as compared with children over two years of age.

Brooklyn Medical Journal.

April.

58 *A Brief History of the Therapy of Various Forms of Light and Radiotherapy. James M. Winfield.
59 *Personal Observations on the Remote Results of Conservative Surgery on the Pelvic Adnexa. John O. Polak.
60 *Gonorrhea in Women. Augustus A. Hussey.

58. **Radiotherapy.**—As the title indicates, Winfield's article is largely historical, but he reports briefly some of his own experience with the *x*-rays. He holds that in electric light we have a most valuable therapeutic agent for ameliorating and curing many chronic or troublesome diseases; that the Finsen method is of undoubted value though limited in its scope, and that radiotherapy is more useful than phototherapy because of its wider range of application. It is capable of producing untoward symptoms, and the operator should be fully acquainted with its possibilities and dangers. It is better in lupus than the Finsen light because of its simplicity, and it is of value in almost all forms of cancer, but surgical procedure is preferable if the cancer is small and easy of access. The author's personal experience and careful study of the literature prove to him that radio-therapy has an inhibitory effect on all malignant growths, and that it should be used in inoperable cancer and after removal by surgical means.

59. **Conservative Gynecology.**—Polak reviews 161 cases of conservative operations on the adnexa. In 75 women one ovary was removed and in 63 one ovary was removed and the other to a greater or less extent resected. In a number of cases the tubes were resected. Several operations were for fibroids. There was no primary mortality. He has been able to follow 20 of the women to pregnancy and one has had three children with but the fraction of an ovary. The functional results have therefore been good, but as far as the pain is concerned, they are less satisfactory. Polak attributes his failures to insufficient appreciation of the exact pathology of the adnexa and consequent errors in judgment; failure to recognize the presence of remote and coincident lesions causing referred pain such as pathologic conditions of the kidney, appendix, gall-bladder, sigmoid and rectum; to an imperfect toilet of the peritoneum resulting in adhesions; to the improper and irrational use of drainage in pus cases, and finally because in many cases sufficient time was not given to the preoperative preparation of the patient. Another point which contributes largely to the success of conservative ovarian surgery is the maintenance of the ovary in a plane of circulatory equilibrium. If this is not done, its blood balance is destroyed; it will swell, increase in weight and become prolapsed. Suppurative disease within the pelvis is antagonistic to successful ovarian resection as the unprotected resected surface seems to be less resistant to infection. When the ovary is the seat of a single cyst of moderate size or of several small ones or a single hematoma, it may be successfully resected, but when there is multiple cystic degeneration, particularly if these cyst formations are found near the hilum or where there are two or more hematomata within the ovary, oöphorectomy should be the procedure of choice. Tubal lesions are more complex than ovarian degenerations or inflammation. From his experience he would say that the tube that is sacculated, thickened, adherent, impatent or the seat of a chronic suppuration, no matter if it be gonorrheal or septic in origin, demands ablation rather than resection. The field of tubal resection is limited to non-inflammatory anomalies of the distal end when the proximal end is healthy and pervious. He feels justified, however, in addition to the above limitations in advocating incision and drainage of pus accumulations (not gonorrheal) within the tube by vaginal incision, delivery of the tube into the vagina and splitting up its free surface for a distance of 1 to 1½ inches. When the tube has been resected, the newly made ostium abdominalis should be attached to the ovary, to form an adhesion which acts as a tubo-ovarian ligament. After resecting the ovary and tube in the manner suggested, Polak commonly suspends the uterus and in this way raises the ovary to a higher pelvic plane Another cause for failure has been inability to recognize lesions causing referred pain, most generally movable kidney and appendiceal lesions. Over 20 per cent. of gynecologic patients have more or less movable kidneys, and generally associated with enteroptosis or gastroptosis. Imperfect toilet of the peritoneum causes adhesions and their avoidance is desirable. The omentum is not only a great isolator, but also a great mischief maker when it has undergone any traumatism. A bruised or torn omentum should be amputated by individual vessel ligation, mass ligatures tending to cause dangerous omental adhesions. Improper and irrational drainage in pus cases often prevents an aseptic and afebrile convalescence and has been the cause of several of his post-operative failures. It is unnecessary in the majority of pus cases and means incomplete work. The pus of a pyosalpinx or a tubo-ovarian abscess is commonly sterile and may be mopped up with sponges and the soiled surfaces cleansed with 50 per cent. peroxid of hydrogen, which is then washed away with normal salt solution and the peritoneal sac closed without a drain. Persistent oozing which can not be covered in with peritoneum, and pus leakage from puerperal lesions or bowel injuries within the pelvis or in the region of the cecum, or the gangrenous condition of the surroundings may make satisfactory suture questionable and demand drainage. Vaginal drainage should be elected in all pelvic cases. The drain should not be taken out too early, leaving it in place for three or four days, loosening, but not removing it. Rest in bed from forty-eight hours to a week should precede elective abdominal work, and the intestinal tract, heart, skin and kidneys be carefully prepared. Attention to such details makes abdominal work easy.

60 **Gonorrhea in Women.**—Hussey recapitulates the points in his article as follows:

1. Gonorrhea is a frequent disease among married women. 2. Its effects are often disastrous to the individual, to the family, and to society. 3. It begins as an acute inflammation and soon becomes chronic, or it is chronic from the start. 4. The acute inflammation if seen early and treated intelligently may be cured. The chronic form is often located in the external genitals for a time, and is

amenable to treatment. 5. When the inflammation has involved the tubes and ovaries the normal condition of the parts is rarely restored. 6. The treatment of gonorrhea is made difficult by the fact that the patient does not apply for treatment at the beginning of the disease. This is due, in the acute cases, to her ignorance of the meaning of the symptoms, and in the chronic cases, to lack of significant symptoms. 7. The best treatment is prophylactic. 8. Treatment of the disease, to be effective, must be commenced early. This can be accomplished only by teaching women that urethritis and leucorrhea are often the precursors of a chronic disease that may undermine their health, cripple their reproductive organs and not infrequently cause death.

Buffalo Medical Journal.

April.

61 *The Toxins of Insanity. James W. Putnam.
62 *Successful Removal of 265 cm. of Gangrenous Intestine. Roswell Park.
63 Henry de Mondeville, the Man and His Writings. (Concluded.) Charles G. Cumston.
64 *Rudolf Virchow. An Appreciation. Charles A. L. Reed.
65 Acetozone in Gastrointestinal Disease. W. F. Drake.

61. **The Toxins of Insanity.**—Putnam reviews the theories and possibilities of toxins as a cause of the various forms of mental disorder, mentioning the insanity of Bright's disease, the mental symptoms associated with diabetes, constipation, exophthalmic goiter, etc., also puerperal insanity, which is being considered by many as largely a toxic form. The theory of the toxins of insanity is one, he says, which is winning adherents.

62. **Intestinal Resection.**—The case reported by Park is of interest as being with a few exceptions the most extensive intestinal resection that has been made. In this case 8 ft. and 9 in. of ileum and descending colon, including the cecum, were removed. The origin of the trouble was an inflamed appendix. He calls attention to the fact that most cases of general peritonitis are plainly due to some easily recognized cause taking their real origin from the inflamed appendix. The largest amount of intestine taken in any of his collected cases was that of a boy where nearly twelve feet were removed, and he promptly died. In fact it comprised nearly his whole intestinal tract. In the patient operated on by Park the results were good. Eleven months later the patient was in good health in every respect.

64.—This article appeared elsewhere. See THE JOURNAL of February 28, title 30, p. 606.

St. Paul Medical Journal.

April.

66 *Gastric Ulcer and Its Surgical Treatment. Judd Goodrich.
67 *Vaginal Section and Drainage for Suppuration in the Pelvis. H. P. Ritchie.
68 School Sanitation Relative to Sight and Hearing. Frank C. Todd.
69 *Treatment of the Hemiplegic State. Arthur Sweeney.
70 Injury to Legs of a Child. J. W. Robertson.
71 Ectopic Gestation. A. E. Spalding.

66. **Gastric Ulcer.**—Goodrich's article is a general review of the literature and facts of the subject with a report of cases operated on in St. Paul.

67. **Vaginal Section and Drainage.**—Ritchie favors the use of drainage because of its conservatism. He finds the immediate mortality of his vaginal operations 6.6 per cent., and considering the circumstances and complications, we may say that the immediate mortality as a result of operation is practically nil. In acute septic cases drainage has its greatest field, and with large abscess and extensive area involved must be looked on as a temporary procedure paving the way for future operation. Considering the high immediate mortality of laparotomy, vaginal section is the elective operation. In puerperal exudates the results are incomparable, but in tubercular cases it should never be attempted. In small abscess, especially of gonorrheal origin and with improved modern methods, both laparotomy and vaginal section must be thoroughly considered, and the operator use his best judgment in considering the condition of the patient, location, size and consistency of the tumor, but the claim that drainage has no field in surgery and that only radical methods are indicated either by the vagina or abdomen, must be amended. Its employment in proper cases with proper after care will be followed by good results.

69. **The Hemiplegic State.**—The point insisted on by Sweeney is proper attention to the muscles and sets of muscles which produce contractures and the manner in which they act, in the after-treatment of hemiplegics. By persistently opposing the conditions which favor abduction and fixation, a large degree of comfort and a considerable degree of function can be assured to the patient, which might be lacking otherwise. He believes in starting active measures to prevent contracture from the very first, especially in the case of the arm.

California State Journal of Medicine, San Francisco.

March.

72 Final Result of a Lorenz Operation for Congenital Luxation of the Hip. Emmet Rixford.
73 Symposium on Diseases of the Pancreas: Report of a Case of Pancreatic Cyst. William F. Cheney.
74 Report of a Case of Chronic Interlobular Pancreatitis, Pancreatic Calculi, with Multiple Cysts of the Pancreas. L. W. Allen.
75 *Chemical Pathology of Pancreatic Disease, with Reference to Diagnosis. Philip K. Brown.
75½ Case of Pancreatic Cyst. E. E. Kelley.
76 Treatment of Hydrocele by Eversion of the Tunica Vaginalis (Longuet's Method). Dudley Tait.
77 Conservatism in Gynecological Surgery. W. F. B. Wakefield.
78 Pott's Disease of the Spine in Children: Its Complications. James H. Tebbetts.
79 Treatment of Sclerosis of the Middle Ear. M. W. Frederick.

75. **Chemistry of Pancreatic Disease.**—The résumé of Brown's paper gives as a probable fact the association of pancreatic glycosuria with pathologic conditions in the islands of Langerhans. Steatorrhea is a symptom of failure of both the bile and pancreatic fluid. A failure of bile to enter the intestine lessens the flow of pancreatic fluid by lack of the proper stimulant. Occlusions of the lower end of the common duct shut off the pancreatic fluid, and if bile is forced into the pancreatic duct in consequence, acute inflammatory disturbance may result in the gland. The steatorrhea of primary pancreatic disease with diminution or absence of pancreatic secretion is marked by an excess in the neutral fats, reaching even 60 per cent. of the total excretion, instead of the normal of between 10 and 15 per cent. and further by a striking diminution of fatty acids. With the steatorrhea is microscopic evidence of a failure of proteid digestion, shown by the finding of muscle fibers and casein coagula. Fermentative and excessive putrefactive changes in the feces are evident to the eye and nose. Indican is present in increased amount in the urine, as are also the ethereal sulphates. The methylene blue test of Williamson may be used to determine a hyperglycemia in a suspected case of diabetic coma when means of obtaining urine are not at hand. Bremer's test is not so useful. Lipuria and lipemia are interesting, but not pathognomonic symptoms. The presence of fat-splitting ferment in the urine might be of extreme value in fixing a pancreatic connection to a glycosuria or to an acute disturbance in the epigastrium.

Western Medical Review, Lincoln, Neb.

March 16.

80 President's Annual Address, Custer County Medical Society. C. Pickett.
81 *The Surgical Aspect of Prostatic Hypertrophy. J. E. Summers, Jr.
82 Sequelæ of Influenza; or Masked Influenza. Louis Was.
83 *Typhoid Fever—Intestinal Paralysis. George Haslam.
84 The Importance of the First Treatment in Minor Surgery. J. Henry Young.
85 Periosteal Osteo-sarcoma of Upper Extremity of Femur; Ligation of Common Iliac Artery, with Amputation at Hip-joint and Removal of Portion of Pelvis, etc.; Recovery. Leonard Freeman.
86 The Clinical Laboratory. J. W. Mayhew.
87 Clinical Facts and Their Meaning. Joseph M. Aikin.
88 Headaches of Nasal Origin. James M. Brown.

81. **Prostatic Hypertrophy.**—Summers holds that the medical treatment of this condition may be successful if taken sufficiently early. Catheter life, however, is always dangerous, and operation is preferable. The mortality in surgical treatment is below 5 per cent. Castration and vasectomy are failures, and the former has a mortality of 16 per cent., besides many cases of insanity are reported as following it. He has used the suprapubic method with varying success, but lately has employed the perineal method with good results. He has operated five times, all of his patients being over 60 years of age and in bad general condition. There have been no deaths.

83. **Typhoid Fever.**—The intestinal paralysis of typhoid is especially noted by Haslam, who also speaks of the general treatment of the disorder by copper arsenite. He claims that this drug seems to possess almost a specific influence in con-

trolling complications, in proper doses, not over 1/100 gr. though frequently repeated. In cases of intestinal catarrh the benefit is equally marked, but a much smaller dose is sufficient. The complex known as intestinal paralysis, or ileus paralyticus includes at least two forms: 1. Simple intestinal paralysis; 2, virulent or septic intestinal paralysis, the malignant character of which may possibly arise from either of two sources or both, namely from a variation in the metabolism of the bacteria in consequence of the disturbance of normal nerve control, or by the formation of some substance or substances which stimulate the bacteria to virulence, or, secondly, from the excretion into the intestines of some similar substance or substances, but derived in the first place from a septic peritoneum or other septic process. In such cases he would not hesitate to perform high double enterostomy in addition to such other treatment as may be indicated in any severe case of intestinal paralysis, provided the patient is not actually moribund.

Medical Times and Register, Philadelphia.

March.

89 Protective Medication from a Hygienic Point of View. J. McFadden Gaston.
90 Compound Fractures of the Bones of the Hand or Foot. Thomas H. Manley.
91 On the Presence of the Typhoid Bacillus in the Urine and Sputum. Mark W. Richardson.
92 A Report of Two Cases of Septicemia, Successfully Treated with $H_2 O_2$ Medicinal. E. J. Melville.

Georgia Journal of Medicine and Surgery, Savannah.

March.

93 The Successful Treatment of Asthma. E. A. Banon.
94 The Significance of the Temperature in the Diagnosis of Extrauterine Pregnancy During the Period of Collapse from Hemorrhage. Charles P. Noble.

Memphis Medical Monthly.

April.

95 Stricture of the Rectum. Joseph M. Mathews.
96 Splenectomy: Two Successful Cases. Moore Moore.
97 A Practical Demonstration of an Artificial Support in Treatment of Curvature of the Spine, with Report of Case. John C. Clark.
98 Pulmonary Lithiasis, with Report of Case. M. O. Shivers.
99 Experience of an Army Nurse in Cuba. Mrs. L. A. Warner.
100 Anesthesia. Frank D. Smythe.

Clinical Review, Chicago.

April.

101 Lectures on Gynecology. Franklin H. Martin.
102 Clinical Lectures on the Etiology, Pathology, Diagnosis and Treatment of Tumors. Endothelioma. A. H. Levings.
103 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.

Fort Wayne Medical Journal-Magazine.

March.

104 The Use of Inhalers in Treating Diseases of the Respiratory Organs. George W. Spohn.
105 The Therapeutic Value of Radiant Matter and Vibratory Force. A. P. Buchman.

Canada Lancet, Toronto.

April.

106 The Causation and Prevention of Phthisis. Byron Bramwell.
107 Some Recent Studies of Immunity. J. J. MacKenzie.
108 Two Cases in Practice, and an Interesting Book. Ernest A. Hall.
109 A Plea for the Open Method of Treating Fractures of the Patella. F. N. G. Starr.
110 The Open-Air Treatment for Consumption. Angus MacKinnon.

Louisville Monthly Journal of Medicine and Surgery.

April.

111 Foreign Bodies in the Urinary Bladder. W. O. Roberts.
112 Gastrectasis. John J. Moren.
113 Feigned Eruptions—Report of Five Cases. M. L. Heidingsfeld.
114 Dr. James Rodman and His Work. B. F. Eager.
115 Professional Honor. C. W. Heffner.

Kingston Medical Quarterly.

January.

116 Medicines—Their Uses and Abuses. John Herald.
117 Rupture of the Uterus.
118 A Case of Mixed Diphtheria Infection. G. W. Mylks.
119 Purulent Otitis Media. C. E. O'Connor.
120 Notes on 250 Labors. V. Barber.

Columbus Medical Journal.

March.

121 Some of the Veteran Medical Teachers of America. Isaac Kay.
122 The Absorption Treatment of Cataract and Its Effects on the Eye. John W. Wright.
123 The Use of Alteratives in the Treatment of Diseases of the Uveal Tract. C. F. Clarke.
124 Some Clinical Notes on Gonorrhea. W. A. Hackett.
125 Spasmodic Cough. Elmer S. Oman.

New Orleans Medical and Surgical Journal.

April.

126 Spinal Analgesia. E. Denegre Martin.
127 Large Interstitial Fibroid Complicating a Breech Presentation. J. E. Doussan.

Southern Practitioner, Nashville, Tenn.

April.

128 Some of the Common Diseases of the Eye. G. C. Savage.

Medical Examiner and Practitioner, New York.

March.

129 A History of Chronic Nephritis. Louis F. Bishop.
130 A Résumé of the Most Potent Factors of Disease and Death in the World's History, with a Review of Modern Prophylaxis. W. H. Irvine.
131 Eclampsia—A Clinical Study. S. Marx.
132 Local Leucocytosis as the Ally of the Surgeon. Robert T. Morris.
133 Fracture of the External Condyle of the Humerus in Children. Carl Beck.

International Journal of Surgery, New York.

April.

134 A Few Disputed Points in the Treatment of Pyosalpinx. Ralph Waldo.
135 Suprapubic Cystotomy as a Means of Locating the Perineal Urethra—Supplementary Report. Howard Crutcher.
136 Physical Examination in Diagnosis of Fractures. Henry E. Hale.
137 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
138 The Perineum in Labor. Robert C. Robe.
139 The Technics of Amputations. Robert H. Cowan.
140 The Surgical Assistant. Abdominal Operations. (Continued.) Walter M. Brickner.
141 The Surgical Treatment of Enlarged Prostate. Bacon Saunders.
142 Report of Some Surgical Cases (Gallstones). W. Monroe Smith.

Mississippi Medical Record, Vicksburg.

April.

142 Report of Some Surgical Cases (Gallstones). W. Monroe Society. M. J. Alexander.
144 Pneumonia—Report of a Case. M. M. McMillan.
145 How Are Young Physicians to Decide on a Treatment for a Patient with Pneumonia? Report of Two Cases. Holder Speck.
146 Empyema: With Report of Two Cases. B. L. Culley.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 28.

1 *Some Experiments on the Nature and Specific Treatment of Hay Fever. Felix Semon.
2 *Theories of Immunity and Their Clinical Application. A. S. Grunbaum.
3 *On Ankylostomiasis. Oswald Baker.
4 *Trypanosomiasis on the Congo. Patrick Manson.
5 *Trypanosomiasis and Its Cause. Alex, Maxwell Adams.
6 *Filaria Perstans. George C. Low.
7 Screw-Worms in St. Lucia. St. George Gray.
8 *The Diagnostic Value of Blood Counts in Malarial and Other Fevers. T. H. Delany.
9 *Beri-beri Among Lascar Crews on Board Ship. D. W. Keiller Moody.
10 Note on the Changes in the Red Cell Produced by the Malignant Tertian Parasite. J. W. W. Stephens and S. R. Christopher.
11 A Case of the Form of Chronic Joint Disease in Children Described by Still. F. Parkes Weber.

1. Hay Fever.—In 1902 Dunbar of Hamburg reported the discovery of a toxin in the pollen of certain grasses and maize which produced the characteristic symptoms of hay fever and by using the pollen he produced a toxin which immediately quelled the disease and caused retrogressive changes in the objective symptoms produced by the toxin. Semon has further experimented with this, using Dunbar's toxin and antitoxin on himself and on patients and reports them. From experiments he deduces the following conclusions:

1. There can be no doubt that Professor Dunbar has succeeded in extracting from the pollen of certain grasses (maize, wheat, rye, *Anthoxanthum odoratum, Agropyrum repens, Cynosurus cristatus,* etc.), a toxin which when instilled into the eyes or nostrils of people predisposed to hay fever, produces in these parts the characteristic subjective and objective symptoms of the disease. 2. The toxin, when injected into the eyes or nostrils of people not predisposed, produced, in the great majority of cases, no symptoms whatsoever, but it certainly appears from Dr. T.'s and my own experiences as if there were instances of transition in which, although the persons experimented on never suffer from typical hay fever, they are yet more susceptible to the influence of the toxin than the ordinary run of people. 3. The effects of the toxin in people suffering from hay fever are as variable in intensity as are the attacks of the affection itself, both with regard to the local and constitutional symptoms. 4. Professor Dunbar's antitoxin certainly pro-

duced immediate disappearance of the subjective, and after a few minutes great amelioration of the objective symptoms. 5. The mixture in equal parts of a toxic solution (1 in 500) and the antitoxic serum suffices to neutralize the specific effects of the toxin. 6. The effects of the antitoxin appear in some instances to be sufficient to prevent a reappearance of the subjective symptoms, while, in other instances repeated instillation of the antitoxin were required to produce ultimately the return to normal conditions.

He remarks that this is only a preliminary report, but believes that we are on the threshhold of facts which will enlighten us on the most useful way to treat this common and troublesome disease, but we can not, however, build up excessive therapeutic hopes for the following reasons:

1. We do not yet know what the nature of the special predisposition is which makes one person react violently to the influence of both the natural pollen and of the artificially produced toxin, while it leaves another quite unaffected. 2. While it may be justly hoped that it may be possible to produce an even more effective serum no guarantee can at present be given, nor do we know for certain whether it will be possible to produce such antitoxin in sufficient quantities to use it extensively. It may, however, confidently be hoped that such will be the case. 3. While the antitoxic serum as at present produced quickly neutralizes the local effects of the toxin, it is impossible to foretell—and on this point I wish to insist very strongly—whether in case of genuine attacks of hay fever, an even more powerful serum than at present prepared, applied by way of instillation into the affected mucous membranes, or by subcutaneous injection or by internal administration, will arrest all the symptoms when once fully established, and even if it should do so, whether the effect will be lasting, or whether the symptoms may not return. 4. Finally, it is equally impossible to foretell whether by the prophylactic application of a very powerful serum we shall succeed in altogether preventing the actual outbreak of an attack in those specially predisposed.

He offers this as a warning against expectations that may not be realized.

2. **Immunity.**—In this second lecture Grunbaum takes up the action of antitoxins, hemolysins, cytotoxins, etc., giving more particularly the views of Metchnikoff and his school.

3. **Ankylostomiasis.**—This disorder, which was first discovered in 1879, but which has only become fully recognized as a tropical and semitropical scourge of later years is described at length by Baker. He gives its geographic limits as extending between 50 north latitude and 30 south latitude, thus covering a large portion of the north temperate zone, as well as the tropics. It is, however, less common in some places than in others, and almost unknown in some. He thinks, however, the mortality that it directly causes can hardly be exaggerated. The fact that when the parasites are few they do not produce appreciable harm does not affect the fact that in a vast number of cases they occur in such numbers as can not fail to be seriously harmful. He rather questions the views of Loos that it can enter in the hair follicles of the skin, but holds there is ample reason to account for the prevalence of the disease by the habits of the natives of the countries where ankylostomiasis is most prevalent. They generally live in very crowded dwellings with complete absence of all sanitation, are dirty in their habits, eating food with their hands, which are generally not clean, some even eating the earth itself. In Egypt this is a common practice. It is not surprising, therefore, that ankylostomiasis is so prevalent there. The earlier symptoms of the condition are hardly known because patients rarely apply for treatment until their anemia incapacitates them for their daily occupation. In addition to the anemic symptoms, the chalk-white pallor of the nails and mucous membranes, empty pulse and cardiac distress, mental and bodily apathy, edema arising first in the eyelids and subsequently extending to the whole body is common. With this there is usually slight albuminuria, marked mental failure and great drowsiness. When this stage is reached the case is generally hopeless. The blood presents no special symptoms excepting eosinophilia, which is generally met with in helminthiasis. The diagnosis is made certain by the usual appearance of the ova in the feces. The question whether there is a toxin produced by the parasites having hemolytic and other destructive properties is noticed, but Baker hardly thinks that such a factor is necessary to explain the symptoms and conditions produced. The prophylaxis of the disorder may be summed up in one word, sanitation. For treatment there is no vermifuge comparable to thymol, which can be given in doses of 10 to 60 grains, the latter only to very robust persons. The former dosage is much safer, three doses given the same day at varying intervals. If after four or five doses the ova are still found in the dejecta, the dosing should be repeated. The importance of early recognition is emphasized in conclusion. No clinical examination of a patient in a tropical country can be deemed adequate which does not include a microscopic study of the blood and dejecta.

4. **Trypanosomiasis on the Congo.**—Manson reports a case and discusses the etiology. He makes the suggestion that the animal that inflicts the bite would seem to be the cause of this case, and this may be the poisonous tic, *Argas moubata*, which has been long known as occurring in portions of Southern and Central Africa.

5. **Trypanosomiasis and Its Cause.**—Maxwell-Adams suggests the probability of rats being the intermediate carriers of trypanosomiasis and that the disease is conveyed by direct inoculation from its bite.

6. **Filaria Perstans.**—Low describes this parasite which is found near the equator in South America and Africa, especially in the wooded regions, towns and cultivated sections being exempt from it. He has sought to find the insect which carries the disease, but with negative results and he sees no special proof of its connection with sleeping sickness.

8. **The Blood Count in Malaria.**—Delany has studied some 66 cases in Calcutta Hospital and gives a tabulated statement of his results as to the blood findings. With few exceptions they showed an excessive percentage of large mononuclears. Besides this the lymphocytes are usually largely increased. Taking the normal percentage as between 20 and 30 per cent. or say 25 per cent., they often run up to 60 per cent., or even over this in malaria. The total white blood count is diminished. Allowing 7,500 per c.cm. as normal, the relation of white to red cells is frequently 1 to 1,000 or more, instead of the normal about 1 in 600. The more severe the case the more marked the changes. Myelocytes are frequently present to an appreciable extent. The red blood corpuscles are diminished, but the loss of white cells seems to be much greater than that of the red cells as a rule. The hemoglobin is so much less diminished than the red cells in anemic cases that the color index is usually above 1. The reduction of white blood corpuscles to 1,500 or less is of grave prognostic importance. In such cases it is the experience in the Medical College Hospital that large doses of quinin hypodermically will alone save the patient. In four of his cases there was leucocytosis present, an exceptional condition. This seems to be a rare complication of malaria. These were all severe cases and suspected at first to be plague. He suggests that leucocytosis in these severe malarial cases indicates a reaction of the blood to the intense poisoning, and that in such severe cases the leucocytosis varies directly with the intensity of the poison. He also mentions liver abscess which may occur and the need of examining the liver and remarks that it is only by repeated examination of the normal blood that the skill to properly value the blood findings of malaria will be obtained. The greatest difficulty is in differentiating large mononuclears.

9. **Beri-Beri.**—Moody reports a case occurring on board ship and expresses the opinion that the rice theory of the disease has the best evidence in its favor.

The Lancet, London.

March 28.

12 Theories of Immunity and Their Clinical Application. A. S. F. Grunbaum.
13 *The Comparative Value of the Mouth, the Rectum, the Urine, the Axilla, and the Groin for the Observations of the Temperature; Especially in Regard to Tuberculosis and to the Effects of Exercise and Other Conditions. F. W. Burton-Fanning and S. Gurney Champion.
14 Medicolegal Postmortem Examinations. Henry H. Littlejohn.
15 Bilharziosis Surgically Considered. Frank Milton.
16 *Further Note on the Pulse Wave in Aortic Regurgitation. Paul M. Chapman.
17 Necessity for a More Frequent Use of the Cystoscope in the Diagnosis of Diseases of the Urinary System. John G. Pardoe.
18 An Unusual Case of Matting of Intestines for Which Double Enterectomy Was Performed Successfully. Bilton Pollard.
19 Treatment of a Formidable Case of Sprue by Diet; the Value of Strawberries. Edward H. Young.
20 *Advances in the Treatment of Paralytic Deformities. A. H. Tubby.
21 A Case of General Miliary Tuberculosis; Symptoms of Acute Myelitis Involving the Conus Medullaris and Cauda Equina; with a Note on the Value of the Abdominal Ice-Bag. Vidal G. Thorpe and Edwyn R. Glazebrook.

22 Recent Experiences of the United States Army with Regard to Sanitation of Yellow Fever in the Tropics. W. C. Gorgas.

13. **Temperature Observations.**—Burton-Fanning and Champion have studied the temperature tests taken in various parts of the body, the mouth, rectum, urine, axilla, groin, etc. The mouth temperature is markedly affected by external conditions, breathing cold air or by the effect of cold on the outside of the face. The rectal temperature varies less from the oral, provided the latter has been thoroughly taken, than is usually supposed. He thinks it is a good rule to allow at least five minutes in the rectum, though a much longer time may be required in the mouth. The average rectal temperature which he finds is about 4 per cent. higher than the average oral. To obtain the maximum elevation of mercury from the urine, it should be voided over the bulb and not traverse much air. The time required to obtain maximum readings in the axilla and groin may be as much as fifteen to fifty minutes in a few cases, but ordinarily ten minutes is sufficient. The rectal temperature averages about .2 of a degree above that of the urine, about .6 of a degree above that of the groin and .9 above that of the axilla. The effects of exercise on temperature are noted, raising it in all localities, excepting in the mouth. As most observers have used the mouth for the determination of this fact, the results have not always been satisfactory. The authors have also studied the temperature in tuberculosis and have noted here the same rise of temperature from exercise as in health and other diseases. The patient with tuberculosis, however, is characterized by the consistency of his reaction to the slighter degrees of effort and by the fact that it usually exceeds that of health or other diseases. Menstruation also causes a rise of temperature.

16. **The Pulse in Aortic Regurgitation.**—Chapman adds a note to his former work on this subject in the "British Medical Journal," of Feb. 16, 1901, giving, as he thinks, graphic proof in support of his contention that the pulse of aortic regurgitation is not always retarded or delayed.

20. **Paralytic Deformities.**—Tubby discusses the treatment of paralytic deformities following infantile paralysis or anterior-poliomyelitis or the spastic type, hemiplegia, cerebral diplegia and those due to injuries of the nerves. He describes the method of tendon grafting, giving its history. The *rationale* is to utilize what is ill-directed voluntary movement and restore the balance of muscle as far as possible in the affected part, so that the active muscles are not brought to work against the enfeebled ones, thus producing deformities. The brain, he thinks, becomes readily aware of the new conditions of movements by education. The methods and technic of operation are described. He calls attention particularly to the necessity of re-shaping the joint surface in old cases and putting the foot or the limb in fully corrected position and to leave no tension of the reinforcing muscle. Arthrodesis is useful in some ankylosed joint cases, but he does not believe in its propriety in the knee, because the long straight shaft of the bone so formed is inconvenient, brittle from paralytic changes, and liable to fracture. He would prefer to use mechanical supports with a ring-catch at the knee-joint or to transplant portions of the fascia from the sides and back of the joint into the patella. At the ankle, however, it is a valuable measure because it gives a suitable basis of support. In spastic paralysis the whole secret of success of tenotomy consists in preventing elongation of the bond of union and carefully guarding it until equilibrium of the opposing groups of muscles has been established. If there is fair intellectual development and no fits, it results in nothing else but good physically and mentally because the more these patients are able to get about and be in touch with others the more they improve. In cases where it is possible to restore the continuity of the nerve, muscle grafting is the method for overcoming the difficulties and he reports a case in point.

Journal of Tropical Medicine, London.

March 16.

23 Trypanosomiasis on the Congo. Patrick Manson.
24 *Sanitation in Warm Climates—India. Thomas C. Hodson.
25 The Antisepsis of Major Eye Operations, as Practiced by Some of the Leading Ophthalmologists of Europe. (Continued.) E. H. Elliot.

24. **Sanitation in the Tropics.**—The remarks in Hodson's article refer especially to India. He says the sanitary measures prevalent in the west are not suitable for tropical climates. The character of the people must be considered. In most European dwellings in India the ventilation and lighting are good, but the natives have a tendency to crowd together and the apathy of native members of municipalities and corporations is a retarding factor in sanitation in India. The sanitation of Calcutta, for example, has been considerably improved since the constitution was suspended. The water supply is an important matter, but the tank system in use is liable to great contamination. He thinks that where there is a mixed population, like Hindoos, and Mohammedans, and the caste system prevails, the faucets should be painted in distinctive colors, such as red for the high caste, blue for the low caste and green for the Mohammedans. The disposition of dead bodies and sewage is remarked on. It is not always possible to get an efficient system of drainage. Whatever system is adopted must be provided without interfering with the prejudices and comforts of the natives. The trench system is cheap, but is not always efficient. The incineration of sewage needs to be very thorough or else it becomes too offensive. In the rural regions of India there is no attempt at sanitation, the crow, the kite, the vulture and the pig furnish the best that is afforded. The utmost tact has to be exercised in considering the prejudices and religion of the people. Cholera, enteric, plague, smallpox, and malaria are the chief epidemic diseases for sanitation to meet. Two of these are essentially water-borne, though there is a mass of evidence that flies and insects also convey the infection, hence, the importance of purity in water supply. In a cholera epidemic much can be done by prophylactics internally such as daily doses of dilute sulphuric acid or pills of quinin and carbolic acid. The white man must take the lead by example. Plague is met by inoculation, inspection, segregation and quarantine. These have practically failed in India because it has been deemed imprudent to continue them on account of prejudice. Throughout India close watch must be kept of native opinion and the prejudices of the people.

Bulletin de l'Academie de Medecine, Paris.

26 (XLIX, 8.) *Signs of Predisposition to Tuberculosis. C. Rayer.—De quelques moyens ayant pour but de découvrir les sujets prédisposés à la tuberculose pulmonaire. Appareil.
27 *Ictère infectieux fébrile. Valassopoulo (Alexandria).
28 *Discussion of Liqueurs and Alcoholism.
29 (No. 9.) *Wine Concentrated in a Vacuum; Non-alcoholic; Non-toxic. Garrigou.—Le vin naturel, ce dont on l'accuse. Moyen de procéder a la rectification des défauts qu'on lui reproche.
30 *Note sur la syphilis osseuse héréditaire chez les nouveaunés (maladie de Parrot), chez les enfants et les adolescents, chez les adultes et les vieillards (maladie de Paget). Lannelongue.
31 *Insurance of Children's Lives. P. Budin.—Des assurances sur décès d'enfants.

26. **Detection of Predisposition to Tuberculosis.**—Rayer confirms the fact established by Robin that the respiratory interchanges are exaggerated in tuberculous subjects, while the vital capacity is diminished. He has devised an apparatus which enables the vital capacity to be more accurately tested than heretofore. In computing the results he calculates the individual index by taking into account this capacity, the age, the height, and the circumference of the chest. The apparatus also allows the elasticity of the lung to be measured. He determines the amount of carbon dioxid exhaled by collecting the exhaled air in a vessel containing baryta water. The layer of baryta carbonate that forms with five liters of exhaled air is the test of the proportion of the gas present.

27. **Febrile Infectious Icterus.**—From his experience at Alexandria Valassapoulo believes that the bilious typhus prevalent there is a specific disease, due to some germ that lives in the sewers. It has been epidemic, or sporadic cases have frequently occurred, since the sewers were built. It has no features in common with the bilious fevers of tropical climates, nor with typhoid nor yellow fever, but is probably identical with the disease commonly known as relapsing infectious icterus.

28. **Alcoholism.**—In this burning discussion of the evils of alcoholism in France and the means to remedy it, Magnan

made the statement that at the great public insane asylum of Sainte-Anne the proportion of patients admitted for the effects of alcoholism alone was 26 to 27 per cent. in 1870, but during the siege of Paris and afterward the proportion dropped to 13 and 14 per cent. As times grew better the alcoholism increased constantly until in 1900 it was 31.35 per cent. of simple alcoholics and 19.18 per cent. of alcoholic insane subjects, a total of 50.93 per cent. The incessant progress of alcoholism, he added, is filling the hospitals and asylums, the jails and the houses of correction, while the weakly, epileptic, tuberculous and idiotic children of these alcoholics crowd the benevolent institutions. He expatiated on the established epileptogenic effect of the liqueurs consumed in France and remarked that their toxic action is magnified by the custom of taking them on an empty stomach. [The discussion was closed at the meeting of March 10, the Académie reconsidering its previous action and voting that all essences, natural, synthetic or extractive, which may be incorporated with alcohol or wine, are dangerous or at least harmful drinks. It also urged strenuous measures to diminish the number of saloons.]

29. **Non-Alcoholic and Non-Toxic Natural Wine.**—Garrigou is professor at Toulouse among the vineyards of France, and is interested in retaining wine as a popular drink while convinced of the dangers from the abuse of alcohol. He has, therefore, worked out a process of concentrating wine in a vacuum by which means all its tartrates and salts of lime, etc., are eliminated with the water and alcohol. If water is then added to the desiccated residue a wine is produced that is absolutely non-alcoholic and is also free from every ingredient that could by any possibility be toxic. For those that prefer an alcoholic drink a certain amount of the purest alcohol could be added. By another process he has succeeded in expelling the alcohol with the salts while retaining all the natural water in the wine. This non-alcoholic natural wine retains its flavor and perfume and has received the sanction and approval of a number of leading viticulturists and military men.

30. **Hereditary Syphilis of the Bones in Infants, Youths, Adults and the Aged.**—Lannelongue presents arguments to sustain his assertion that the affection of the bones which occurs in infants and is known as Parrot's disease, also the affection of the bones that occurs in youths, and that known as Paget's disease in adults and the aged, are all manifestations of hereditary syphilis and are identical at every age. This deforming osteitis is an early or remote accident of hereditary syphilis, and is of the same type whether it affects the long bones, the skull or the trunk. He has been able to find 45 published cases of Paget's disease, and all the writers dismiss the idea of syphilis from the etiology, never taking the pains to examine the patient for other signs of hereditary lues. Fournier has long proclaimed that one may be a heredosyphilitic and be liable to all the eventualities of this dangerous taint without showing the slightest evidence of dystrophy or other congenital sign of the condition. Adult patients with Paget's disease do not apply to the physician usually until two to even forty years after they first noticed symptoms of the condition, the hat becoming too small, the trousers too long, etc., or else more or less pains. They do not connect with the condition the headaches they may have had since childhood, the neuralgias of all kinds, but attribute them and the pains to rheumatism. Acquired syphilis is denied, and no one thinks of looking for the writing of heredity possibly clearly inscribed on the tibia, femur, skull, etc. Hitherto the link between the osteitis of youths and that of the aged has been overlooked, but palpation of the long bones their entire length will frequently reveal some irregular enlargement at one or more points. In one of the published cases a young man had an incurvation of the tibia attributed to a traumatism, but at 73 five bones exhibited the same curvature, Migraine is expressly mentioned in 6 out of 33 cases on record, and rheumatic pains in 9 others. Four patients out of 6 with Paget's disease were much benefited by mercury, and its effect is frequently striking in the osteitis of the young. All that is recent, is arrested and retrogresses and the bone resumes its normal consistency. Long-established deformities are of course not influenced. Berger and Chauffard have each observed a case of Paget's disease in a mother and grown son or daughter, exactly similar in each generation.

31. **Insurance of Children.**—Budin went personally to certain provinces in the north of France to investigate the causes of the unusually high infant mortality. He learned that it was a current custom to insure the children in certain Belgian life insurance companies, which pay a premium on the death of a child. Under one year the parents receive $4, the premium increasing to $21 for a child of 6. Women who have baby farms frequently insure the infants, and it is possible to take out a policy on a child in all of the eight companies engaged in this business. For one penny a week, payable in advance, one company agrees to pay an insurance of $2 to $12.50 and supply a one-horse vehicle for the funeral. Certain companies pay a premium on the death of a child if both father and mother are insured. Others insure the unborn child and pay a premium on its death *in utero*. A Ghent physician collected statistics showing that 140 out of 147 infants insured in that city died before the end of their first year. The Académie adopted a resolution calling the attention of the government to this traffic in infant lives.

Centralblatt f. d. Grenzgebiete, Jena.

32 (V, 23.) Die diagnostische Bedeutung (importance) des Ureteren-Katheterismus. C. Adrian. (Commenced in No. 21.) Critical review.
33 (VI, 1.) *Das Nieren- (kidney) Aneurysm. P. Ziegler. Critical review.
34 (No. 2.) Die otitische Pyemie. A. Goldschmidt. Critical review of 116 articles. (Commenced in No. 1.)

33. **Renal Aneurism.**—Ziegler has collected 19 cases of traumatic and 7 of non-traumatic origin. In the latter, endocarditis with embolism or atheroma of the vessels is accepted as the cause. All the cases which were not operated on terminated fatally, while 3 of the 4 treated by surgical intervention recovered. There can be question only of nephrectomy, and on account of the possibility of ligating the renal vessels at once, the transperitoneal route is preferable. The aneurism may be painless or accompanied by excruciating pains. The bleeding may be dangerous before any tumor has developed; it may precede the tumor by months and years. The latter may be no larger than a fist or the size of a man's head. The artery is so small that there is no pulsation, and auscultation seldom gives any results. The aneurism is most likely to be confused with neoplasms, hydronephrosis and hematonephrosis. In case of a neoplasm the growth is liable to be more rapid and the bleeding less, while there is emaciation. In case of metastatic tumors the diagnosis is clearer. The list includes 2 cases published in this country by Keen and Armstrong.

Centralblatt f. Gynaekologie, Leipsic.

35 (No. 9.) Beitrag zur Kasuistik und Etiologie der Uterus-Ruptur. H. Füth.
36 Ueber die Haftung des Eies (settlement of ovum) an atypischem Ort (place). F. Hitschmann and O. Th. Lindenthal.
37 Beitrag zum Studium der tubaren Zwillingsschwangerschaften (twin pregnancies) in derselben Tube (the same tube). E. Ferroni. One case.
38 (No. 10.) *Die doppelseitige Unterbindung (bilateral ligation) der Aa. hypogastrica und ovarica bei inoperablem Uterus-Carcinom. O. Th. Lindenthal.
39 Zur Frage des Argentum-Katarrhs Neonatorum. C. W. Bischoff.
40 Ruptura aortæ. Sectio cesarea in mortua. Lebendes Kind (living child). Weisswange. One case.
41 *Zur Technik und Anwendung des vaginalen Kaiserschnitt (Cesarean section). W. Rühl.
42 Kolpohysterostomie bei Retroversio uteri gravida cum incarceratione. G. Wennerstrom. One case.
43 (No. 11.) *Nochmals zur Dilatator-Frage (question). L. Knapp.
44 *Erfahrungen (experiences) mit dem Dilatatorium von Bossi und Frommer nebst Bemerkungen über einen seltenen Verlauf (unusual course) eines Eklampsie-Falles. A. Ostrcil.
45 *Zur Dilatation nach Bossi. L. Meyer (Copenhagen).
46 *Zur Anwendung des Dilatators von Bossi. G. Beck (Prague).
47 *Zur Frage der schnellen geburtshilflichen Erweiterung (obstetric rapid dilation). A. Calmann (Hamburg).
48 *Zur Uterus-Dilatation. E. Preiss (Kattowitz).
49 (No. 12.) Ueber den physiologischen Verschluss (occlusion) der Nabel- (umbilical) Arterien und über das Vorkommen von Längs- (longitudinal) Muskulatur in der Arterien des weiblichen (female) Genitales. C. J. Bucura.
50 Gleichzeitige (simultaneous) extra-uterine und intra-uterine Schwangerschaft (pregnancy). K. Reifferscheid.
51 Fall von traum., nicht durch Coitus entstandenem Vestibular-Riss (laceration) der Vagina. N. Ostermayer (Budapest).

52 Ein höchst einfacher (extremely simple) Perforator. J. Kadyi (Jaslo).

38. **Ligation of Arteries for Inoperable Carcinoma.**—Lindenthal reports Lott's experience in 3 cases. The hemorrhages were arrested, but the course of the malignant disease was not materially affected, although the general health was benefited by the cessation of the hemorrhages. In 2 instances the purulent discharge was diminished by the curetting done at the same time. Krönig has reported equally favorable results in 3 cases and Iwanow's experience with 5 has been still more instructive. In his first case the hemorrhage, discharge and pains had all vanished six months after the arteries had been ligated and the patient felt still in good health nine months later. In 3 other cases there had been no recurrence of the menses, six, seven and eight months after the intervention and one patient had gained 9 pounds in forty-six days and another 12 pounds in fifty-one days. In his fifth case the hemorrhages were arrested for only four months, during which time there had been a gain of 4 pounds in weight. Iwanow calls this case a failure and attributes it to the fact that the uterine and ovarian arteries had been ligated in a previous radical operation, and when he ligated the hypogastric arteries collateral circulation had already been established. In all the published cases (not including Pryor's) the hemorrhages were favorably influenced and the purulent discharge diminished, especially when supplemented by curetting. The operation is easily performed under Schleich's local anesthesia. It is interesting to note that in one of Lott's cases menstruation recurred regularly after a time, although the pathologic hemorrhages were permanently arrested.

41. **Anterior Vaginal Cesarean Section.**—Rühl claims the priority for this operation and states that since he operated on his first patient, Nov. 1, 1895, he has repeated it four times and always with good results. Bumm's technic described in the *Centralblatt*, 1902, No. 52, is identical with his.

43 to 48. **Instrumental Dilation.**—The various dilators used are described and several are illustrated. All are supposed to be improvements on the original devised by Bossi. Calmann rejects instruments and dilates the os with his fingers. In a case of eclampsia he dilated the closely-shut cervix in a primipara at eight months so that in twenty minutes the os gaped the width of the hand and the fetus was rapidly expelled by the contractions induced. He introduced first one finger, boring and twisting it, then the second finger, and when three fingers were admitted he spread them. He has repeated this method of manual dilation in several instances and always with the best results, never causing injury of the cervix. Ostreil reports 4 cases of instrumental dilation. The instrument did not cause a laceration in any instance, but still in 3 cases, after expulsion of the fetus, a laceration was found extending from the portio vaginalis to the vaginal vault. There was no bleeding from them. They were unmistakably due to the further manipulations, forceps in 2 and version and extraction in 1 case. The mechanism of instrumental dilation of the cervix is quite different from that of normal delivery, and the parts are exposed afterward to laceration from manipulations which in normal circumstances would not affect them. The cervix is dilated only in its transverse diameter and during the birth it contracts down on the membranes and presenting portion. For this reason instrumental dilatation, he thinks, should be restricted to urgent cases. When it is possible to wait an hour he prefers the metreurynter or bougies. He describes a case of severe eclampsia apparently cured by delivery. Diuresis was normal, no albumin in the urine and the uterus had been empty for eight days, when suddenly the eclampsia reappeared and the patient lay unconscious nearly the entire day. This case suggests, he thinks, that the etiology of eclampsia varies in different cases. Meyer has used Bossi's dilator in 15 cases and states that a laceration was noted in only one instance, the first case thus treated, in which too much haste was used. No palpable solution of continuity was detected in any other, and there was no bleeding in any case. Beck reports a case to show that the cervix contracts again on the removal of the instrument. The dilation should be carried a little further than necessary to allow for this.

Dermatologische Zeitschrift, Berlin.

53 (X, 1.) *Iron Light. Kromayer (Halle).—Eisenlicht. Experimentelle und klinische Untersuchungen.
54 Test of New Medicaments by Applying Them in Salves to the Skin. H. Brat.—Die Hautemfindungen nach Anwendung einiger neuer Medikamente in Salbenform.
55 Further Tests of Atoxyl. W. Schild.—Weitere Versuche mit Atoxyl.
56 *Vegetarische Diät gegen chronische Furunkulose. Guensburg.

53. **Improved Iron Light in Therapeutics.**—The iron arc light that has been made for phototherapy has hitherto proved disappointing, although it has been established that it fully equals Finsen's apparatus in bactericidal power and also that the erythema induced is essentially the same with both. Kromayer has been studying the iron lamp with numerous experimental and clinical tests and has found that the rays penetrate deeper the less their superficial absorption and action. The rays that are readily absorbed by the skin and induce the erythema do not penetrate beyond it. The iron lamp at close contact produces such an intense erythema in a few minutes that its application has to be suspended before the penetrating part of the ray has had time to act. By eliminating the rays that are absorbed by the skin and produce the erythema, it is possible to obtain the deep action with the iron lamp just as well as with the more expensive Finsen apparatus and in much less time. These extremely frangible rays that are absorbed and make the trouble are the short-waved ultra-violet rays. In the Finsen apparatus they are eliminated by the water filter and distance of more than a yard between the concentrating lens and the skin; they are lost in this long interval. Kromayer proclaims that it is possible to eliminate them by passing the rays through a colored fluid. He has used a solution of methylene blue for the purpose, and found it answer every purpose. It is possible by this means to apply the light close to the skin with maximum strength of current and penetrating power, with all the drawbacks of the short-waved ultra-violet rays eliminated and consequent avoidance of the intense erythema production. He gives cuts of his modification of the "Dermo" lamp, and spectra obtained in control tests with the iron and carbon electrodes, passing the blue light through various thickness of Thiersch flaps and scraps of skin. The results are all in favor of the superiority of the iron light for phototherapy. His lamp, the "Triplet," is made to use with either iron or carbon points or a mixture of both. The blue fluid is in the "compressor" applied to the skin. He details his clinical experience with 18 patients with various affections treated with it, including 7 of lupus. The treatment has been too recent for decisive results, but the general impression is encouraging. The best effect was obtained in 3 cases of alopecia areata.

56. **Vegetable Diet in Chronic Furunculosis.**—In the case described by Guensburg the patient, a man of 60, had suffered for fifteen years from recurring abscesses with severe nervous cutaneous pruritus, urticaria, etc. There was no trace of sugar or albumin in the urine but an excess of uric acid. He finally adopted a strict vegetable diet, and since then has been free from the furunculosis and other cutaneous affections which had proved rebellious to all therapeutic measures.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

57 (XXIX, 11.) Remarks on Contagious Diseases Legislation. C. Fraenkel.—Randbemerkungen zu dem Entwurf eines preussischen Seuchengesetze.
58 *Beitrag zur Frage der Identität der Rinder- und Menschen- (bovine and human) Tuberkulose. Troje.
59 *Ueber die Spezifizität der Eiweiss- (albumin) prezipitirenden Sera und deren Werthbemessung (value) für die Praxis. A. Wassermann and A. Schütze.
60 *Ueber Antistaphylococcen-Serum. Pröscher. (Höchst a. M.).
61 Ueber einen Fall von operativ geheilter Colitis ulcerativa. I. Boas.
62 *Apparatus for Air Douche in Ear Affections. A. Lucae.—Ein zweckmässiger Apparat zur Anwendung der Luftdouche bei Ohrenkranken.
63 (No. 12.) Zur Geschichte der Ruhrforschung (history of dysentery research) und über Variabilität der Bakterien. Kruse.
64 Ueber die Priorität der Entdeckung des Ruhr- (of discovery of dysentery) Bacillus. A. Chantemesse and F. Widal.
65 *Zur Erleichterung (to facilitate) der mikroskopischen Malaria-Diagnose. R. Ruge.
66 Ueber Infusorien im Magen und im Darmkanal (in gastrointestinal canal) des Menschen und ihre klinische Bedeutung (importance). P. Cohnheim.

67 *Zur galvanokaustische Behandlung der Prostata-Hypertrophie nach Bottini. K. Vogel.
68 Multiple Larynx-Papillome im Kindesalter (In childhood). F. K. Lämmerhirt.
69 *Ueber Darmausschaltung (operative exclusion of part of intestine). P. Manasse. (Commenced in No. 11.)
70 Behandlung von Puerperal-Fieber mit Antistreptococcen-Serum. Steinhauer.
71 Die Behandlung der Gonorrhoe mit Chinolinwismuthrhodanat Edinger (Curin pro injectione). R. Stern.
72 Ueber die Verschiedenheit (difference) der therapeutischen Werth (value) von Chininverbindungen (quinin combinations). M. Christen.
73 Special Representative Medical Business Meeting at Berlin.—Der ausserordentliche Aerztetag in Berlin, March 7, 1903. Landsberger. See Editorial, p. 996.

58. **Identity of Human and Bovine Tuberculosis.**—Troje publishes a case of unmistakable transmission of bovine tuberculosis to a young butcher by casual inoculation of the skin. The tuberculous affection resembled lupus with a tuberculous affection of the lymph glands and extensive abscess formation, requiring excision of the glands in axilla and infraclavicular fossa.

59. **Specific Precipitation with Sera.**—Wassermann and Schütze emphasize the fact that this precipitation is specific for the species not for the source of the albumin. It occurs with serum, milk, bone or other substance containing albumin from any animal of a given species. They have established certain units and standards to serve in its application to forensic and other purposes. The amount of precipitating substance in 1 c.c. of the standard precipitating serum is the unit for the test reaction.

60. **Staphylococcus Serum.**—Pröscher announces that he has succeeded by inoculation of goats with virulent cultures of staphylococci in producing a serum which will protect rabbits against staphylococcus infection. He is now experimenting with horses and expects soon to apply the serum in the clinic.

62. **Apparatus for Air Douche in Ear Affections.**—Lucae has merely adopted for the purpose the apparatus used in many breweries to determine the pressure of the beer by means of carbon dioxid. It dispenses with the exertion of compressing the bulb, as the compressed carbon dioxid supplies the power.

65. **Improved Method of Microscopic Diagnosis of Malaria.**—Ruge confirms the great superiority of the improved method recently published by Ross and described in THE JOURNAL of January 31, p. 339. Ruge found that owing to the lack of fixation, some of the blood was washed off in the rinsing and sometimes the entire deposit. He, therefore, improves on Ross' original method by combining the process of dissolving out the hemoglobin with a fixation process. He accomplishes this by placing the slide with the film side down in a 2 per cent. aqueous solution of formalin to which .5 to 1 per cent. of acetic acid has been added. In a few minutes all the hemoglobin is drawn out while the film is fixed and will bear energetic rinsing afterward and staining with dilute Manson's solution or with the Romanowsky stain. As the parasites do not take the stain quite so well after the formalin, it is best to stain first with the Romanowsky and then, after washing off the sediment, treat with dilute Manson's solution to bring out the delicate plasma rings. The specimens are not very handsome, he admits, as there is always more or less sediment, but the parasites show finely and much time and trouble is saved. By this method he sometimes found parasites when the findings were negative by other methods.

67. **Galvanocaustic Treatment of Hypertrophied Prostate.**—Schede operated on a man of 71 with the Freudenberg instrument according to Bottini's technic; no narcosis, the bladder filled with a solution of boric acid. The patient died suddenly half an hour later from no discoverable cause. The autopsy showed that the cauterization had not been as deep as supposed, and the aspect demonstrated that the fluid in the bladder must have cooled off the cautery so that the desired result was not attainable with it. He, therefore, operated afterward on a man of 74 without filling the bladder with fluid. The patient died forty-eight hours later from acute peritonitis, and the autopsy showed that the bladder wall, not being distended, must have lain in folds, and the cautery cut through one of these folds, making an incision 3 cm. long, with consequent escape of urine into the peritoneal cavity and fatal inflammation. Freudenberg has published a similar case. It is, therefore, inadvisable to operate on an empty bladder. Vogel suggests that these difficulties might be obviated by distending the bladder with air or by raising the pelvis. The latter might have a tendency to stretch the bladder walls by traction on them by the contents of the abdomen.

69. **Exclusion of Intestine.**—Manasse has recently operated on a boy of 15 who exhibited symptoms suggesting appendicitis or invagination. A number of abscesses was found in the small intestine and he found it necessary to resect 115 cm. and to perform unilateral exclusion of 35 cm. more. He operated according to Senn, thus bringing up to 15, he remarks, the number of cases of this operation that has been published. His patient fully recovered and has now normal stools. At the first laparotomy the small intestine was found covered with false membranes and adhesions, and a liter and a half of pure pus was evacuated. On account of the fibrinous-suppurative peritonitis nearly the whole of the much-distended small intestine was eventrated. The patient recuperated after thirty-six hours of collapse followed by such excessive secretion of intestinal juice that the bedding had to be changed several times a day. Seven perforations of abscesses occurred in two loops of the eventrated intestine and by the third week all the feces were discharged through these fistulæ. On account of eczema from the irritation of the intestinal juice the extremely emaciated patient was placed in a continuous bath during the day and dressed with salve at night. The abdominal wound gradually healed in the water bath and the eventrated intestine began to recede. By the end of eight weeks the two portions of the intestine containing the row of three and four fistula openings were parallel in the wound which had been closed all around them. The two affected portions, with the long intervening loop, were then excised; the afferent stump inserted in the cecum and the efferent stump, estimated to be 35 cm. long, treated as stated above, by unilateral exclusion in the third laparotomy.

Muenchener Med. Wochenschrift, Munich.

74 (L. 11.) Vom "Aerztlichen Intelligenzblatt" zur "Muenchener Med. Wochenschrift." G. Merkel.
75 *History of the Medical Press in Germany. K. Sudhoff.—Das medicinische Zeitschriftenwesen in Deutschland bis zur Mitte des 19 Jahrhunderts.
76 Zur Kenntniss der Sogen, Banti'schen Krankheit und der Anemia splenica. F. Marchand.
77 Fall von Uronephrose, geheilt durch Ureterplastik und Nierenbecken-faltung (taking up folds in renal pelvis). W. Petersen.
78 Die Gefahr der Infektion mit Ankylostoma duodenale im Grubenbetrieb (danger of infection among miners). H. Bruns.
79 *Ueber Tetanie gastrischen und intestinalen Ursprungs (origin). W. Fleiner (Heidelberg).

75. **History of the Medical Press.**—Sudhoff proclaims that it was a physician, T. Renaudot, who first conceived the idea of the newspaper. His name is honorably known in the annals of science, but it is to his inauguration of the newspaper that he owes his chief fame. Since the *Acta diurna* of ancient Rome there had been nothing of the kind in existence, although germs of the future periodical press might be discovered in the Venice *Foglietti* of 1600, and five similar undertakings in Holland, England, Frankfurt and elsewhere, 1605 to 1622. Renaudot was a graduate of Montpellier and established himself as a physician in Paris in 1624. He gained the ear of Richelieu and with his aid founded the first free polyclinic, and in spite of the opposition of Guy Patin succeeded in introducing chemical medicines into medical practice. He established an official "Bureau d'adresses," a kind of general employment bureau with branches all over France, which in connection with his extensive practice and his intimacy with high officials, kept him thoroughly posted on all the events of the day and suggested the publication of a daily paper to impart the news to others. May 30, 1631, the first number appeared, a quarto sheet, printed on one side in four columns and entitled the "Gazette." The highest officials of France used its columns to further their schemes, and even the king, Louis XIII, wrote anonymously for it. Renaudot conducted it for twenty-eight years, long after it was the sole relic of his former eminence. He never found a place for medicine in his "Gazette," and the first journal article

of medical import appeared in the "Journal des Sçavans" published at Amsterdam in 1665. An English periodical, "Philosophical Transactions," appeared about this time and also sheltered a few minor articles on medical lore. In 1682 a monthly was founded at Leipsic which bore the rubric "Medica et Physica" under the title "Acta Eruditorum." It was soon followed by a French journal entitled "Le Temple d'Esculape" issued by an unscrupulous exponent of minor surgery who had won fame and wealth When he was sent to prison his journal lapsed. It was followed by Claude Brunet's "Journal de Médecine" and "Progrès de la Médecine" until his death in 1709. After that date there was no medical press in France for fifty years, but Berlin witnessed in 1717 the birth of the first exclusively medical German publication, the "Acta Medicorum Berolinensium." Sudhoff reviews all the journals that have appeared since in Germany down to the foundation of "Virchow's Archiv" in 1847. The descriptive list fills six pages. A special journal for psychiatry was founded as early as 1805, and for legal medicine in 1784. Surgery first appeared on a title page in Richter's "Chirurgische Bibliothek" founded in 1771.

79. **Tetany of Gastric and Intestinal Origin.**—Fleiner's experience corroborates the assumption that tetany may be the result of a sudden thickening of the blood in consequence of excessive loss of organic juices. In one case which he describes at length a chronic gastrointestinal affection preceded and survived the tetany so that the latter was merely an episode in its course. The stomach showed pronounced achylia gastrica and the undigested food passing into the intestines set up an irritation which caused intense hypersecretion. The small intestine was predominantly affected. As the diarrheic stools increased in number and quantity the tetanic symptoms became more and more marked. The stools were almost exclusively intestinal juice with undigested fat. When the tetany is of gastric origin the functional disturbances in the stomach soon entail severe organic and mechanically acting alterations at the outlet of the stomach or in the first part of the duodenum. But when the intestines are involved, a severe organic lesion is not indispensable to the production of the tetanic symptoms, and the prognosis, therefore, is not so grave. Treatment is purely medical, chiefly dietetic. Fleiner warns against the use of opium or similar drugs in chronic diarrheas The transient improvement from the paralysis of the intestines is soon followed by aggravation of the conditions as the retained fecal masses putrefy and injure the intestines and general health. The irritating substances should be evacuated from below by injections of tepid saline solution or chamomile tea once or twice a day. Absorption in the upper intestine can be promoted by drinking a warm saline mineral water before breakfast (Wiesbaden "Kochbrunnen," diluted one-half with hot water). The patient must eat little at a time. Exacerbations constantly occurred in his intestinal case whenever the patient ate voraciously. The undigested particles of food in the feces suggest what substances to limit and what to allow freely. Fatty stools impose restriction of fats in the dietary. Undiluted milk may prove harmful in certain cases. Especial benefit may be derived from freshly expressed meat juice with 20 to 30 drops of dilute hydrochloric acid. The latter does not alter the taste, but evidently has a favorable action on the secretion of pancreatic juice. If sufficient fluids can not be ingested to compensate the loss from excessive diarrhea, subcutaneous saline infusion will be useful. In case of impending or pronounced tetany, therefore, saline infusion can not be too urgently recommended. Also alcohol, especially diluted red wines, good lager beer or champagne, is excellent in the tetany of intestinal origin, but alcohol in any form is contraindicated in gastric tetany.

Wiener Klin. Rundschau, Vienna.

80 (XVI, 40.) Zur Frage der Makrocytase. J. Donath and K. Landsteiner.
81 Beobachtungen über Hemagglutination. K. Landsteiner.
82 Die Bedeutung (importance) der functionellen Anpassung (adaptation) für die Pathogenese der abnormen Bindegewebsverknöcherung (ossification of connective tissue). G. Holzknecht.
83 (Nos. 41-42.) Lithiasis in Bosnien-Hercegovina. J. Preindlsberger.
84 *Trauma und Syphilis. Max Stern.
85 *Zur Prognose und Therapie des Delirium Tremens. A. Pilcz.
86 Folk-Medicine Among the Gypsies of Servia. F. S. Kraus.—Volksmedizin serbischer Zigeuner.
87 (No. 43.) *Ueber Methoden der Deutung (interpretation) und Reproduction von Radiogrammen. R. Kienböck.
88 *Beitrag zu den tabischen Arthropathien. J. Donath.
89 *Eine neue Curette für die Abtragung (removal) der adenoiden Vegetationen im Nasenrachen. J. Fein.
90 (No. 44.) Seborrhoe und seborrhoisches Ekzem als provozierende Momente für Syphilis-Eruption. S. Ehrmann.
91 (No. 45.) *Beitrag zur Prüfung (testing) der Desinfektions-Mittel. Sublimat. J. Pelnar. (Commenced in No. 44.)
92 (No. 46.) *Ueber die Beziehungen zwischen (relations between) Menstruation und Erysipel. M. Jerusalem.
93 *Beitrag zur operativen Behandlung der vorderen eitrigen (anterior suppurative) Mediastinitis. W. Kopfstein.
94 (No. 47.) Ueber eine Affektion des Plexus brachialis. E. Bloch. Case of Peripheral Neuritis.
95 *Das Hydrargyrum oxycyanatum in der urologischen Praxis. P. Asch.
96 Die prophylaktischen Massregeln (measures) auf dem österreichischen Dampfer "Gundulic" infolge der Pestfälle (plague on Austrian steamer). A. Strauch. (See also Nos. 12-13.)
97 (No. 48.) *Ueber Behandlung von Hernien mit Hartparaffin-Injektionen. H. Eckstein.
98 Dionin, ein neues Morphin-Derivat. J. Weigl.
99 (No. 49.) Zwei Fälle von Herniotomie wegen Inkarzeration von Coecum und Processus vermiformis bei kleinen Kindern (in small children). F. Klaussner.
100 Einiges über Tuberkel-Bazillen und Tuberkulose. F. F. Friedmann.
101 Ueber eine weniger bekannte Erscheinungsform (lesser known form of) der Aktinomykose beim Menschen (in man). A. Brabec. (Commenced in No. 48.)
102 Die Dermo Lampe. H. Jansen. For phototherapy.
103 Ibid. Kattenbracker.
104 (No. 50.) *Zur Technik der heteroplastischen Deckung (closure) von Schädel- (skull) Defekten. R. Porges.
105 Dermatitis toxica hervorgerufen durch Rhus vernicifera. A. Buracz.
106 Ueber harnäckigen (obstinate) Pruritus im äusseren Gehörgang (outer auditory canal). M. Sugar.
107 (No. 51.) Das Redressement schwerer (severe) habitueller Skoliosen und Kyphosen. A. Schanz.
108 *Haut- (skin) Emphysem bei der urämischen Vergiftung (intoxication). V. Cominotti.
109 (XVII, 1.) *Klinische Bemerkungen über die Tuberkulose der Haut (of skin). Neumann.
110 Beobachtungen über das Verhalten der Hautgefäsze (behavior of blood vessels in skin) auf thermische Reize (stimulation) mit Hilfe des (with aid of) Onychographen. A. Kreidl.
111 Ueber Prezipitin-Reactionen des menschlichen Harns (of human urine). Landsteiner and von Eisler.
112 (No. 2.) *Weitere Beiträge zur Indikations-Stellung der Jejunostomie. Karl Maydl. (Commenced in No. 1.)
113 *Ein Vorschlag (proposal) zur medikamentösen Behandlung der Lungen-Tuberkulose. A. v. Weismayr.

84. **Trauma and Syphilis.**—Stern describes two cases which demonstrate the unfavorable influence of even a latent syphilis on the course of traumatic or inflammatory lesions. In one case a young man had an extensive phlegmon on the thumb, a year after he had acquired syphilis which had apparently subsided under a brief course of treatment. The progressive, rebellious character of the phlegmon was so unusual that the local measures were supplemented by vigorous mercurial inunctions under which it rapidly healed. In the second case a trifling wound on the finger suddenly became virulent as the subject exhibited signs of freshly acquired syphilitic infection Under mercurial treatment the wound on the finger healed as the manifestations of syphilis subsided. Stern suggests that many cases of intractable ulcerative processes may have owed their progressive character to an unsuspected substratum of lues, and advises tentative mercurial treatment in such cases.

85. **Prognosis and Therapy of Delirium Tremens.**—Pilcz reports from von Wagner's clinic at Vienna that out of 110 cases of typical delirium tremens, 1898-1901, there were only 4 deaths, and 3 of these were due to some complicating organic affection. Only 1 was due to the delirium itself. This proportion of only .9 per cent. is less than that reported from other psychiatric clinics and Pilcz attributes this fact to the method of treatment followed. The aim is to eliminate from the body as rapidly as possible all the toxins that have accumulated in it. The patients are restricted to milk and given three calomel pills of .1 gm. each. No narcotics are given. Chloral is especially avoided on account of its injurious action on the heart. No alcohol is allowed, except when indicated as a stimulant for the heart. Under these circumstances it is a most valuable adjuvant.

87. **Interpretation of Radiograms.**—Kienböck calls attention to the value of systematically copying with the pencil or crayon the radiograms taken. He shows by a number of examples how many points can thus be brought out and rendered clear which otherwise would be overlooked, a wealth of details in regard to the structure of the bones, their alterations, position, etc. No artistic talent is required, merely the reproduction of the salient points in the radiogram, as an interpretation to accompany it.

88. **Tabic Joint Affections.**—Donath shows by the radiograms of two subjects the rarefaction of parts of the bone, characteristic of atrophy, casting a lighter shadow than the sound bone. The decalcification has a tendency to affect the bones of the foot and hand rather than the long bones. One of his patients exhibited other unmistakable evidences of cerebrospinal lues.

89. **Curette for Adenoid Vegetations.**—The new instrument has a shaft shaped like a bayonet, with a slanting handle. The curette itself is shaped more like a stirrup. It is illustrated and the claim made that it gives much greater freedom of action than other curettes of the kind.

91. **Defect in Our Methods of Testing Disinfectants.**—Pelnar points out that we have failed to take into account the influence of the changed osmotic tension on the bacteria. When the disinfectants are tested in an isotonic solution it is amazing to note how much they lose in bactericidal power. He found that when the injurious influence of the distilled water was omitted from the disinfectant even sublimate proved to be scarcely at all bactericidal He also noticed that the round micro-organisms are affected by the differences in osmotic tension less than the rods. The longer the body of the bacteria, the more they feel the influence of the varying osmosis.

92. **Relations Between Menstruation and Erysipelas.**—Jerusalem affirms that in about 75 per cent. of all cases the erysipelas coincides with menstruation. Even in male subjects there seems to be a periodical biologic wave which coincides with the recurrences of erysipelas. Fliess has found this wave in men to occur at intervals of twenty-three days, and in 8 men with erysipelas Jerusalem noted the recurrences on the twenty-third day, or on some multiple of 23.

93. **Suppurative Mediastinitis.**—All but one of the 4 cases reported recovered under appropriate surgical treatment. One was a metastatic suppurative mediastinitis consecutive to typhoid fever; the second a chronic abscess in the mediastinum following a contusion, and following caries of the sternum in the third. The fatal case was an acute phlegmon of the neck and mediastinal abscess consecutive to extraction of the second left molar. Death occurred with indications of general sepsis.

95. **Hydragyrum Oxycyanatum in Urology.**—Asch reports experiences with 31 clinical cases and various experimental tests which have convinced him that this drug has superior advantages for general urologic practice. It is as powerful in every respect, to say the least, as potassium permanganate and is almost completely non-irritating. He uses it in acute uncomplicated cases in a .05 to 150 solution at first and then 1 per cent., ordering the syringe of the individual capacity of the patient's urethra, which he carefully tests beforehand. In the posterior urethra he follows Janet's technic, with a solution of 1 per 10,000 at first and 1 per 5,000 to 2,000 later, warmed to 86 or 95 F.

97. **Paraffin Injections in Hernia.**—Eckstein reports 4 cases which establish that a tendency to hernia can be effectively combated by an injection of hard paraffin at the spot. Also that an existing hernia free from adhesions can thus be rendered controllable by a truss, or completely cured. The first case was that of a young woman with bilateral inguinal hernia, painful under the truss. About 4 or 5 c.c. of hard paraffin were injected under local anesthesia as a subcutaneous shield over the inguinal ring. The paraffin spread out in a flat disc and maintained this position, while all the previous pains from the hernia ceased at once. The larger hernia on the other side was treated in the same way by subcutaneous injection of 10 c.c. of the hard paraffin, a truss applied and the patient stayed in bed a week. At first the discs of paraffin could be moved around, but they soon grew into place and now form solid, effective shields and all discomfort from the tendency to hernia is at an end. A supplementary injection of 12 c.c. of the paraffin was found necessary a few months later, on one side, as the entire ring had not been covered by the first. The second patient was a boy of 9 with an old, painful umbilical hernia. About 6 c.c. of hard paraffin were injected into the hernial sac and a plaster bandage applied. The hernia was completely controlled and all pains banished. The results have been equally good in the 2 other cases, men of 40 and 68, with inguinal hernia for one or both sides.

104. **Celluloid for Closure of Defect in Skull.**—In the case described the oval defect in the skull resulting from caries of the parietal bone was closed by inserting two narrow strips of celluloid, 1 mm. thick in the center, but tapering to .5 mm. thickness at the ends. They were about .5 cm. longer than the transverse diameter of the defect and were inserted in niches chiseled for them in the diploë, in which they fitted snug and firm. The skin and periosteum were mobilized until they could be brought together and sutured over the gap. The wound healed normally and the patient recovered complete health, while by the end of four months there was complete restitution of the bone, with no gap palpable. The space between the strips allowed free escape of the secretions, while the irritation of the diploë evidently stimulated regeneration of the bone.

108. **Uremic Emphysema of Skin.**—Cominotti describes a case in which certain symptoms suggested unmistakable uremia, but the physician was perplexed by a zone of emphysema. The fossa and the axilla were swollen to a height of several centimeters. The entire zone was sensitive to pressure. The idea of uremia was therefore abandoned and acute miliary tuberculosis diagnosed, tracing it to the enlarged retrobronchial glands. Instead of this, however, the autopsy disclosed that the subcutaneous mediastinal emphysema was the result of laceration of the septa of the alveoles in the lung by a large subpleural hemorrhage which, like the punctate ecchymoses observed, was evidently a manifestation of uremia.

109. **Cutaneous Tuberculosis.**—Neumann believes that inoculation of children and others by persons with tuberculous lesions on the skin or adjacent mucous membranes is more frequent than generally recognized. In one place he observed 4 cases in one year of tuberculous lesions of the penis in children who had been circumcised. Tuberculous lesions of the upper air passages as well as of the face and mouth may inoculate others with tubercle bacilli by intimate contact, especially active and passive osculation. He urges scrupulous care in regard to disinfection of articles used by persons with any cutaneous tuberculous affection, scrofuloderma, etc., and regards cutaneous tuberculosis as in fact a more threatening source of infection of others than pulmonary tuberculosis; for one reason, because its tuberculous nature is so often unrecognized. Dressings used for persons with tuberculous lesions of the nose, vulva, vagina or uterus, etc., scrofuloderma, miliary tuberculosis and lupus, should be burnt at once, and attendants should frequently disinfect their hands. The bacilli from cutaneous lesions are also liable to be inhaled or swallowed by other persons.

112. **Indications for Jejunostomy.**—Maydl tabulates the particulars of 169 operations on the stomach performed at his clinic. In his 89 personal operations the mortality was 10, all but one cases of carcinoma. He pleads earnestly on behalf of jejunostomy and publishes comparative statistics showing the better results obtained with it.

113. **Improved Cinnamic Acid Treatment of Tuberculosis.**—Weismayr corroborates Rudolph's assertions in regard to the benefit to be derived in cases of pulmonary tuberculosis of the lungs from cinnamic acid supplemented by lime to render firmer and more durable the new formation of connective tissue under the influence of the acid. (Rudolph's communication was reviewed in THE JOURNAL of January 3, p. 65, No. 122.) Weismayr suggests sodium silicate instead of lime.

The Public Service.

Army Changes.

Movements of officers of the Medical Department, U. S. A., under orders from the Adjutant-General, U. S. A., from March 22 to 28, 1903:

Ashford, Bailey K., captain and asst.-surgeon, U. S. A., is relieved from duty at Ponce, P. R., and will report at San Juan, P. R., for temporary duty at that post.

Holmes, Thomas G., contract surgeon, U. S. A., is assigned to duty as examiner of recruits at Detroit, in addition to his duties at Ft. Wayne.

Kilbourne, Henry S., lieut.-col., on being relieved from duty at the Presidio will report to the commanding general, Department of California, for duty as chief surgeon of that department.

Rockhill, Edward P., first lieut. and asst.-surgeon, is relieved from further duty at the U. S. General Hospital, Presidio, and will report to the commanding officer of the Presidio for duty at that post.

Stephenson, William, major and surgeon, is relieved from duty at Monterey, Cal., and will proceed to the Presidio to relieve Lieut.-Col. Henry S. Kilbourne, D. S. G.

Williams, Allie W., first lieut. and asst.-surgeon, is relieved from duty at Mayaguez, P. R., and will report at Cayey, P. R., for duty to relieve First Lieut. Williard F. Truby, asst.-surgeon. Lieut. Truby will proceed to New York City and report by letter to the Adjutant-General of the Army for further orders.

Yost, John D., first lieut. and asst.-surgeon, is assigned to duty in the office of the attending surgeon and medical superintendent, Army Transport Service, with station in San Francisco.

A board of officers, to consist of Majors Louis A. LaGarde, Henry P. Birmingham, James D. Glennan, surgeons, is appointed to meet at the Army Medical Museum Building, Washington, D. C., April 1, 1903, for the examination of officers of the medical department for promotion.

The following named officers will report to Major Louis A. LaGarde, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for examination for promotion; Captains, George M. Wells, Henry C. Fisher, Henry A. Shaw, Charles F. Kieffer, asst.-surgeons.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending April 4:

Medical Inspector G. E. H. Harmon, detached from the Naval Hospital, Port Royal, S. C., and ordered home to wait orders.

P. A. Surgeon D. B. Kerr, detached from the *Wabash* and ordered to the *Buffalo*.

Asst.-Surgeon J. H. Payne, detached from the Naval Hospital, Newport, R. I., and ordered to the *Wabash*.

Asst.-Surgeon B. H. Dorsey, ordered to the Naval Hospital, Newport, R. I.

Medical Director T. H. Streets, commissioned a medical director from Jan. 31, 1903.

Dr. C. F. Ely, appointed asst.-surgeon, March 6, 1903.

Asst.-Surgeon M. V. Stone, ordered to Naval Hospital, Mare Island, for treatment.

Pharmacist I. N. Hurd, retired from active service on account of disabilities incurred in the service, March 28, 1903.

Medical Director A. A. Hoehling, retired, ordered to duty as a member of the medical examining board, Navy Yard, Washington, D. C.

Medical Director G. P. Bradley, detached from duty as a member of the Medical Examining Board, Washington, D. C., and ordered to duty at the Naval Hospital, Washington, D. C.

Medical Director R. C. Dean, retired, detached from duty as president of the Naval Medical Examining Board, Washington, D. C., and to duty as member of the Naval Retiring Board, Navy Yard, Wasmington, D. C.

Medical Director F. M. Gunnell, retired, detached from duty at the Bureau of Medicine and Surgery, and to be president of the Naval Medical Examining Board, Washington, D. C.

Medical Director C. U. Gravatt, detached from duty as a member of the Naval Retiring Board, and ordered to report for examination for retirement, then home to wait orders.

A. A. Surgeon J. C. Devries, ordered to recruiting duty.

A. A. Surgeon D. P. McCord, ordered home to wait orders.

Asst.-Surgeons R. H. Michels, J. L. Neilson, M. W. Baker, H. Shaw, B. F. Jenness, J. H. Halloway, R. A. Bachmann, H. F. Strine, F. M. Munson, E. M. Brown, J. P. Traynor, R. E. Hoyt, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., and ordered to their homes to wait orders to sea.

Surgeon L. W. Spratling, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Navy Yard, New York.

P. A. Surgeon H. H. Haas, ordered to the Naval Hospital, Portsmouth, N. H.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 2, 1903:

Surgeon W. P. McIntosh, to proceed to Sabine Pass, Texas, for special temporary duty.

Asst.-Surgeon L. D. Fricks, granted leave of absence for three days.

Asst.-Surgeon D. E. Robinson, granted leave of absence for three days from March 28, 1903, under provisions of Paragraph 191 of the regulations.

A. A. Surgeon F. B. Adams, granted leave of absence for twenty-five days from April 7.

A. A. Surgeon J. T. Bullard, granted extension of leave of absence from March 15 to 29, inclusive.

A. A. Surgeon A. C. Fraser, granted leave of absence for thirty days from March 27.

PROMOTIONS.

Asst.-Surgeon L. L. Lumsden, commissioned as passed asst.-surgeon (recess) March 31, effective March 14, 1903.

Pharmacist E. J. Thurston, of the second class, promoted to be pharmacist of the first class.

BOARDS CONVENED.

Board convened at Washington, D. C., March 31, for the physical examination of chief engineers of the Revenue Cutter Service. Detail for the board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General H. D. Geddings, recorder.

Board convened at Detroit, April 7, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; P. A. Surgeon H. S. Mathewson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 4, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 21-28, 3 cases.

California: Los Angeles, March 14-21, 2 cases; San Francisco, March 15-22, 8 cases.

District of Columbia: Washington, March 21-28, 2 cases.

Florida: Jacksonville, March 21-28, 2 cases.

Illinois: Alton, March 14-21, 1 case; Chicago, March 21-28, 18 cases.

Indiana: Indianapolis, March 21-28, 17 cases, 1 death.

Iowa: Davenport, March 21-28, 5 cases.

Kansas: Wichita, March 21-28, 1 case.

Kentucky: Lexington, March 21-28, 2 cases.

Louisiana: New Orleans, March 21-28, 3 cases, 2 imported, the other not traced.

Maryland: Baltimore, March 21-28, 2 cases.

Massachusetts: March 21-28, Boston, 2 cases; Fall River, 3 cases; Lowell, 2 cases.

Michigan: March 21-28, Detroit, 19 cases; Grand Rapids, 4 cases, 1 death; Port Huron, 3 cases.

Minnesota: Minneapolis, Jan. 3-March 28, 92 cases, 3 deaths.

Missouri: Kansas City, March 14-29, 4 cases, 1 death; St. Louis, March 22-29, 6 cases.

New Hampshire: March 21-28, Manchester, 10 cases; Nashua, 2 cases.

New Jersey: Jersey City, March 23-29, 5 cases; Newark, March 21-28, 2 cases, 1 death.

New York: March 21-28, Buffalo, 3 cases; New York, 1 case.

Ohio: Cincinnati, March 20-27, 19 cases, 1 death; Cleveland, March 21-28, 1 case, 1 death; Dayton, March 21-28, 5 cases, 1 death; Toledo, Feb. 14-March 21, 52 cases.

Pennsylvania: Altoona, March 21-28, 4 cases; Butler, March 14-28, 2 cases, 1 death; Dunmore, March 1-31, 3 cases; Johnstown, March 21-28, 9 cases; McKeesport, March 21-28, 2 cases; Norristown, March 21-28, 1 case; Philadelphia, March 21-28, 31 cases, 2 deaths; Pittsburg, March 21-28, 42 cases, 4 deaths, 3 imported.

South Carolina: Charleston, March 21-28, 1 case.

Tennessee: Greene County, March 26, 26 cases; Nashville, March 21-28, 1 case.

Texas: Galveston, March 27, 1 case.

Utah: Salt Lake City, March 21-28, 18 cases.

Wisconsin: Green Bay, March 22-29, 1 case; Milwaukee, March 21-28, 1 case.

SMALLPOX—INSULAR.

Philippines: Manila, Jan. 31-Feb. 7, 1 case; Provinces, Jan. 31-Feb. 7, prevalent.

SMALLPOX—FOREIGN.

Austria: Prague, Feb. 28-March 14, 18 cases, 1 death.

Belgium: Antwerp, Feb. 21-March 14, 5 cases, 3 deaths; Brussels, Feb. 28-March 14, 11 deaths; Ghent, March 7-14, 2 deaths.

Brazil: Rio de Janeiro, Feb. 13-20, 1 death.

Canada: Winnipeg, March 7-14, 1 case.

Canary Islands: Las Palmas, Feb. 14-March 7, 86 cases.

Formosa: July 1, Dec. 31, 1902, 1 case, 1 death.

Great Britain: Birmingham, to March 14, 41 cases, 3 deaths; Bradford, Jan. 15-Feb. 28, 9 cases; Dublin, March 7-14, 9 cases, 1 death; Dundee, Feb. 28-March 7, 1 case; Leeds, Feb. 28-March 14, 26 cases, 3 deaths; Liverpool, Feb. 28-March 14, 172 cases, 13 deaths; London, March 7-14, 2 cases; Manchester, March 7-14, 23 cases, 1 death; Nottingham, Feb. 21-March 7, 4 cases.

India: Bombay, Feb. 24-March 3, 64 deaths; Calcutta, Feb. 21-28, 2 deaths; Karachi, Feb. 15-March 1, 1 case.

Italy: Palermo, Feb. 28-March 7, 1 death.

Mexico: City of Mexico, March 8-15, 6 cases, 4 deaths.

Netherlands: Flushing, March 7-14, 1 case; Amsterdam, March 14-21, 2 cases.

Russia: Moscow, Feb. 21-March 8, 7 cases, 3 deaths; Odessa, Feb. 28-March 14, 6 cases; St. Petersburg, Feb. 28-March 7, 77 cases, 14 deaths; Warsaw, Feb. 21-March 7, 6 deaths.

Turkey: Constantinople, Feb. 22-March 1, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Feb. 13-20, 25 deaths.

Ecuador: Guayaquil, Feb. 21-March 7, 33 deaths.

Mexico: Vera Cruz, March 14-21, 6 cases, 3 deaths.

CHOLERA—INSULAR.

Philippines: Cebu, Feb. 12, 4 cases; Talisay, Cebu, Feb. 12, 6 cases; Provinces, Jan. 31-Feb. 7, 169 cases, 103 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Feb. 21-28, 71 deaths.

PLAGUE—INSULAR.

Philippines: Manila, Jan. 31-Feb. 7, 2 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Feb. 13-20, 2 deaths.

Formosa: July 1-Dec. 31, 1902, 265 deaths.

India: Bombay, Feb. 24-March 3, 1,297 deaths; Calcutta, Feb. 15-28, 468 deaths; Karachi, Feb. 1-March 1, 90 cases, 83 deaths; Madras, Feb. 21-27, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, March 17, 1 death.